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INDIAN MEDICAL ASSOCIATION

VOLUME 35 NUMBER 5 CALCUTTA SEPTEMBER 1, 1960

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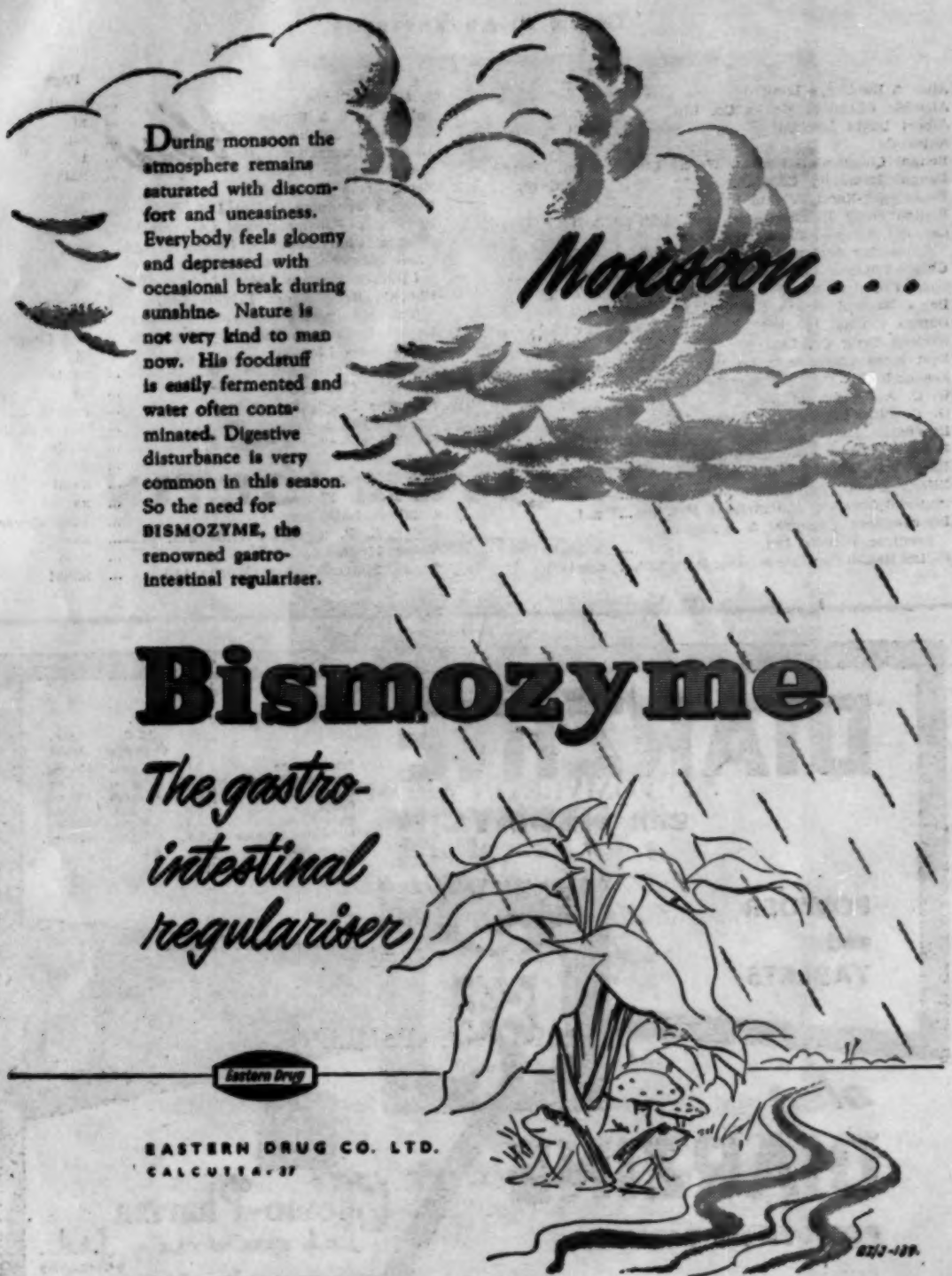

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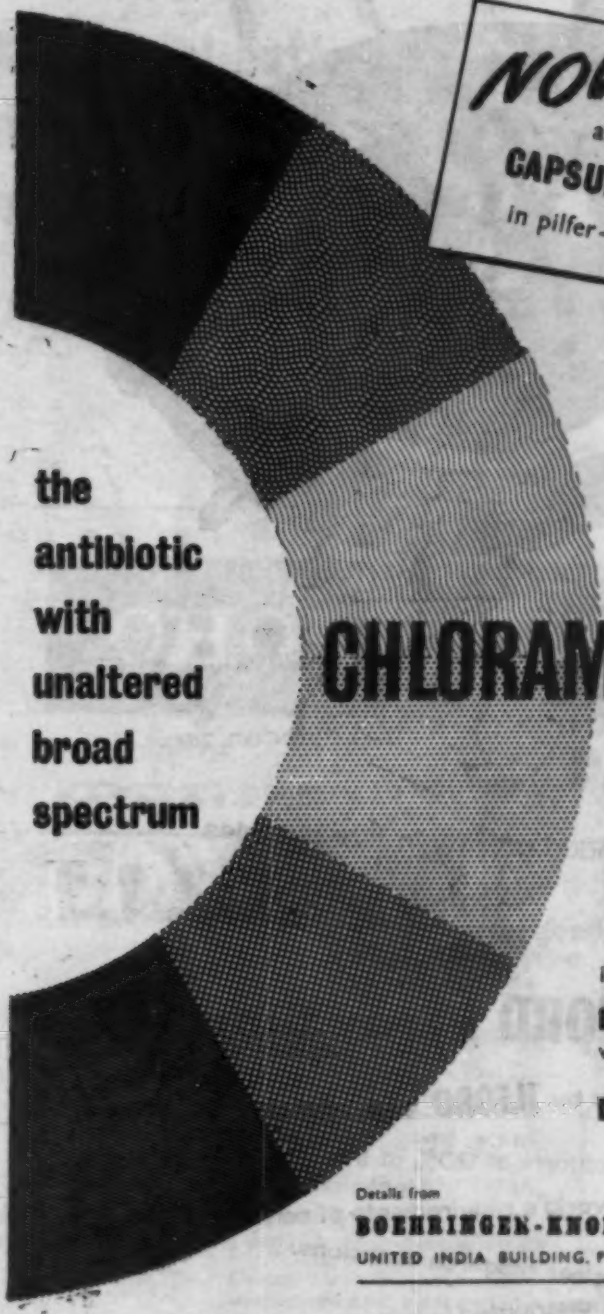

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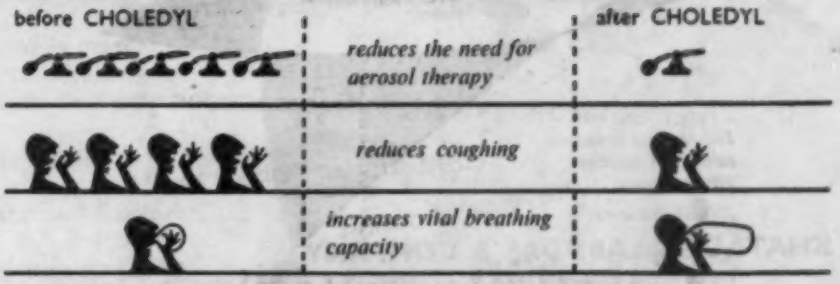

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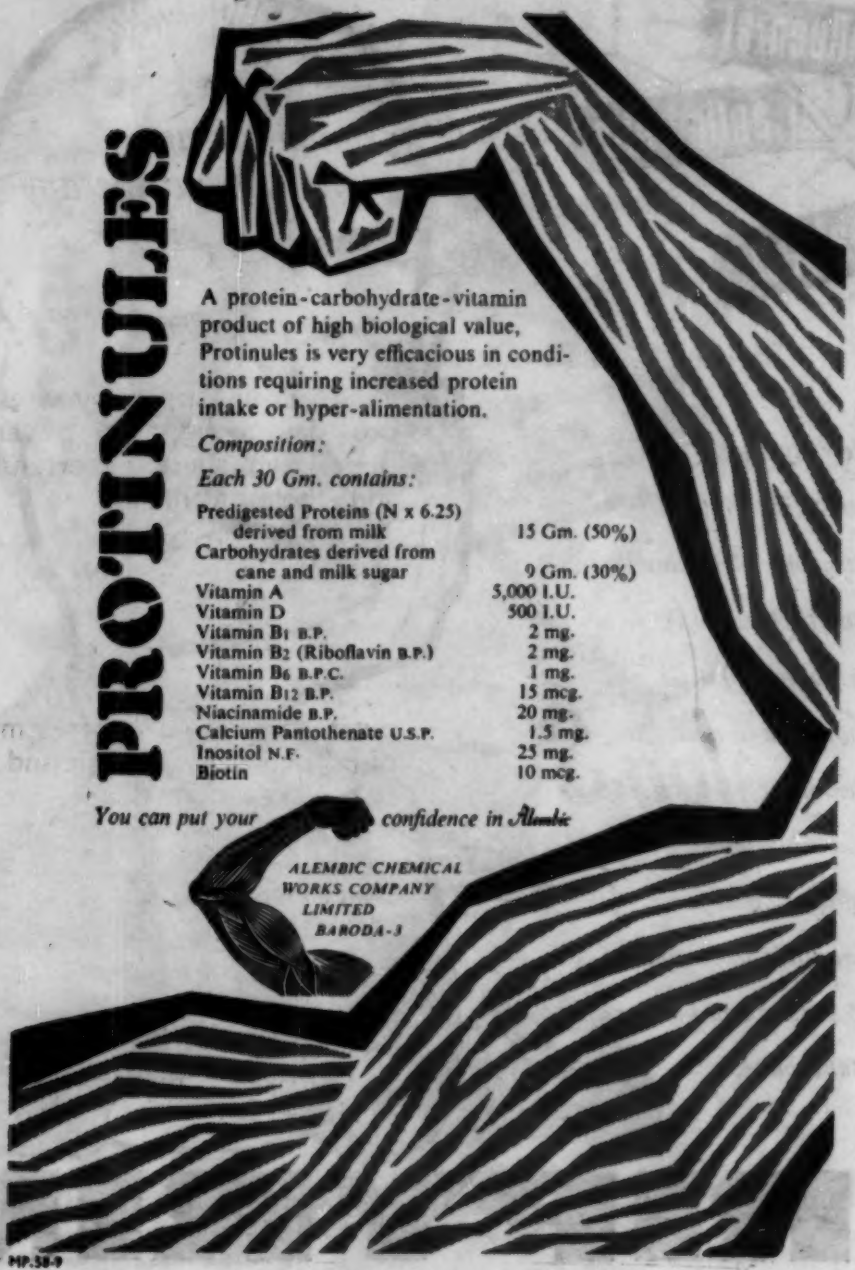
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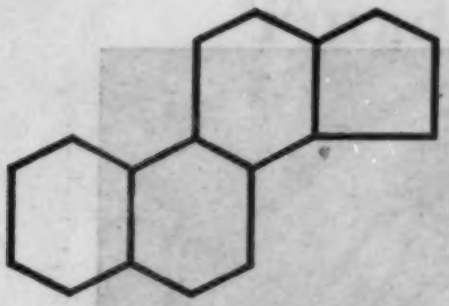

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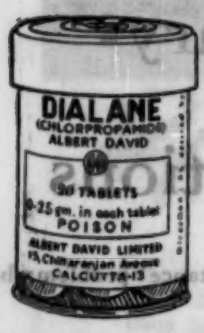

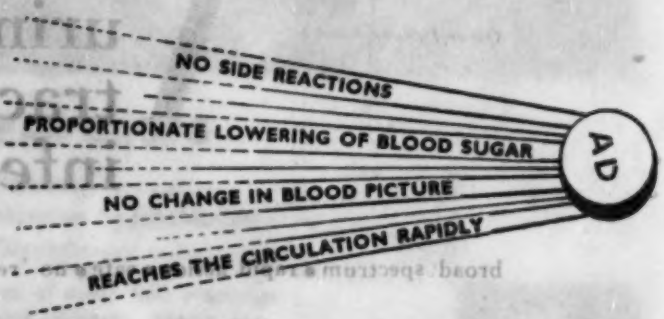

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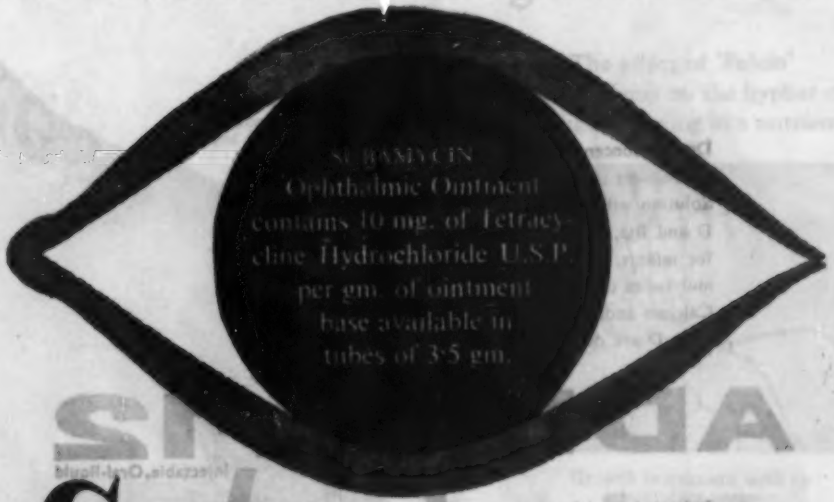
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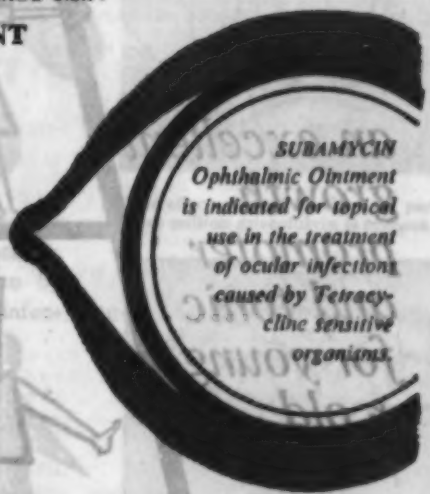
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VOLUME 35 PUBLISHED TWICE A MONTH CALCUTTA
NUMBER 5 EDITOR—P. K. GUHA, M.B., M.R.C.S. (ENG.), D.O.M.S. (LOND.) SEPTEMBER 1, 1960

ORIGINAL ARTICLES

STUDIES IN EXPERIMENTAL EOSINOPHILIA

S. K. SEN, M.D. (CAL.)*

Department of Pathology, Medical College, Calcutta

Various clinical conditions associated with circulatory eosinophilia, with or without lung manifestations, have assumed important proportions since Weingarten (1943) described 'tropical eosinophilia'.

The pioneer experimental work was undertaken by Biggart (1932), Campbell *et al* (1935), although still earlier work dated back to those of Weinberg and Seguin (1914, 1915). More recent and exhaustive investigations include those of Samter (1949), Samter *et al* (1953). These were based on repeated injections of an allergen. Experimental production akin to Loeffler's syndrome was undertaken by Kinsey in 1945, and Chaudhuri *et al* (1954). Experimental production of a condition akin to tropical eosinophilia was undertaken with perhaps some success by injection of a single dose of serum or plasma of patients suffering from tropical eosinophilia by Menon (1945), Misra (1953) and Sen and Tribedi (1954).

The experimental production of eosinophilia was based on the allergic principle and of late on the principle of transmission of the state of eosinophilia by a blood-borne agent in a single dose. Vaughn (1952) introduced the concept of a chemical stimulus in the production of experimental eosinophilia by successful production of peripheral eosinophilia in guineapigs by a single dose of ascaris extract which was presumed to contain certain intermediate products of protein metabolism (polypeptides). As a further step, he (1953) tried to produce eosinophilia by direct injection of histamine which is supposed to be one of the important products of antigen-antibody reaction as encountered in an allergic process.

Further, it has been noted that the relation of allergy to eosinophilia has not always been constant, so that it is not uncommon to find allergic manifestation without eosinophilia. But mere absence of eosinophilia from the peripheral blood does not preclude the possibility of eosinophilia developing in the bone marrow or the tissues. It is this composite study of the distribution of eosinophils which must be considered in assessing the relation of the allergic process to the eosinophilia. Thus a study of induced eosinophilia in the bone marrow, in circulation as well as in the tissues, may bring to light some of the ill-understood aspects of origin, fate and distribution of the eosinophils themselves.

Vaughn (1953) worked with the concept of chemical stimuli for the production of eosinophilia and showed that histamine, in addition to its property of producing hypersensitive reactions in animals, has also a certain capability of producing eosinophilia when injected in a single, sublethal but adequate dose. We found that the eosinophilia thus produced was a transient one, and reached the maximum level within a few hours of injection and came down to normal level within about 24 hours. It offered an unique opportunity of studying the genesis of eosinophilia, its distribution and fate in the different phases of its development. The present study was undertaken to produce eosinophilia in animals in a specially designed series of experiments with a view to studying the origin, distribution and fate of the eosinophils.

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Method and Material

Guinea-pigs were used throughout the experiments. This choice depended on the following facts:

1. These animals were selected because of the readiness with which they react to anaphylactic sensitisation, as well as to histamine.
2. The lungs of these animals act as the chief shock organ, thus facilitating production of eosinophilia with lung lesions, the so-called Loeffler's syndrome.
3. The eosinophils in these animals are almost identical with the human eosinophils.

Elderly and unselected animals may have a higher eosinophil count (Opei, 1904 ; Samter, 1949) and infestation with animal parasites (Opei, 1904). This was obviated by using very young animals and other control measures. The eosinophil count of 100 guinea-pigs of 200 to 250 g. weight established a normal range of the local breed.

The method of Dunger as modified by George (1946) and accepted by Whitby and Britton (1953) was employed for direct count of eosinophils. The blood was collected by nicking across a small ear venule, after due preparation. 100 guinea-pigs each weighing 200 to 250 g. and having eosinophil count between 0 and 100/c.mm. were selected. For different series of experiments they were isolated in batches for 7 days before the experiments were started. During this period daily counts were made to study daily variations in the eosinophil count. Any animal showing variations in the eosinophil count, more than double (i.e., more than 200 per cent) over the mean basal level, was rejected.

Plan of Experiment

The following plan of experiments was undertaken:

38 animals were used in this series. For experimental purposes they were classified in 2 groups:

Experimental series ... 32 animals
Control series ... 6 animals

From preliminary experiments it was found that a dose of 0·5 mg. of histamine hydrochloride could be tolerated by most of the animals. The animals which showed signs of severe shock with 0·5 mg. dose within half an hour were rejected. Further it was revealed that the peripheral eosinophilia which developed following the injection of histamine rose to a peak in 6 to 12 hours and came down to basal level within 20 hours.

Thus the period following the injection till return to normal level was found to consist of the following three phases, viz.,

1. The pre-circulatory eosinophilic phase—the phase between injection and development of circulatory eosinophilia.
2. The circulatory eosinophilic phase—the phase during which eosinophils in the circulation persisted.
3. The post-circulatory eosinophilic phase—the phase immediately after the circulatory eosinophilia had come down.

In the present series these phases have been termed as pre-eosinophilaemic, eosinophilaemic and post-eosinophilaemic phases.

Experimental Series

Group I (*Straight experiment series*)—8 animals were included in this series. 0·5 mg. of histamine hydrochloride was injected intraperitoneally. Eosinophil count was made at the end of 3, 9, 12 and 20 hours. In some cases a 15-hour count was also included.

Group II (*Phase study series*)—24 animals were used in this group. They were subdivided into 3 sub-groups of eight each. All the animals were given a dose of 0·5 mg. of histamine intraperitoneally.

Sub-Group II A—8 animals were used in this group. Eosinophil count was made after 3 hours. The animals were killed before eosinophilia developed, i.e., in the pre-eosinophilaemic phase.

Sub-Group II B—8 animals were used. Eosinophil count was made at the end of 3, 6, and 12 hours. The animals were killed as soon as a fair amount of eosinophilia developed, i.e., in the eosinophilaemic phase.

Sub-Group II C—8 animals were used. Eosinophil count was made at the end of 3, 6, 12, 15 and 20 hours. Animals were killed after eosinophilia in the peripheral circulation had come down (usually after 20 hours) to the basal level, i.e., in the post-eosinophilaemic phase.

A thorough postmortem examination was performed with studies on bone marrow and various other organs. The staining was done by the routine haematoxylin and eosin technique as also Leishman technique (Wright, 1952) to study the eosinophilic distribution.

Determination of Bone Marrow and Tissue Eosinophilia

Bone marrow—For this purpose sternal and/or femoral marrow were scooped out, prepared into histological sections and stained by haematoxylin

and eosin and Leishman stains. The extent of eosinophilia was expressed in terms of percentage of all the nucleated cells of the marrow.

Tissue (lungs)—In guinea-pigs, the chief shock organ is the lung which was accordingly selected as an index of tissue eosinophilia. The number of eosinophils per field of 4 mm. objective was counted and the eosinophilia was graded as follows:

No. of eosinophils	Grade of eosinophilia
0-5	Not significant
5-10	+ (grade I)
10-15	++ (grade II)
15 and above ...	+++ (grade III)

Control series—The six animals set apart for this purpose were maintained similarly. Their blood counts were done as in experimental series. Tissue changes in bone marrow and lungs were also studied at similar hours.

Results

Group I (Straight experiment series)—The behaviour of peripheral eosinophils after a single dose of 0·5 mg. of histamine intraperitoneally in a series of 8 animals is shown in Table 1 and that in the first 4 animals graphically in Fig. 1. Table 1 would reveal that there was a steady rise of eosinophils between six to twelve hours of the injection and the eosinophils came down to the basal level within twenty hours in all the animals except one (animal No. 8). In one animal there was no significant response.

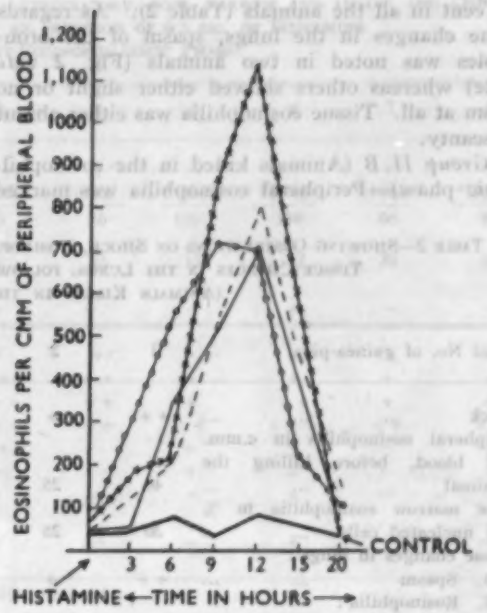

Fig. 1—Showing Behaviour of Peripheral Eosinophils after a Single Dose of 0·5 mg. of Histamine Intraperitoneally in the First Four Animals of the Series (Group I of Histamine Series). The Line Shown as 'Control' Represents Peripheral Eosinophils of a Normal Animal Injected with 2 c.c. of Normal Saline.

Group II A (Animals killed in the pre-eosinophilaemic phase)—It was observed that peripheral eosinophilia did not rise whereas the bone marrow eosinophils showed an increase between 25 and 30

Table 1—Showing Behaviour of Peripheral Eosinophisl after a Single Dose of 0·5 mg. of Histamine Intraperitoneally

Serial No. of guinea-pigs	Eosinophil count per c.mm.							Remarks
	Initial i.e. before injection	At the end of						
		3 hrs.	6 hrs.	9 hrs.	12 hrs.	15 hrs.	20 hrs.	
1	42	50	350	500	700	...	66	
2	52	...	216	550	800	420	84	
3	42	300	540	720	708	216	100	
4	66	180	210	840	1,140	...	54	
5	100	110	150	100	120	...	100	No eosinophilic response
6	44	50	558	546	600	222	60	
7	100	84	...	726	900	...	126	
8	44	36	96	228	742	350	246	Eosinophilic response still persisting

per cent in all the animals (Table 2). As regards tissue changes in the lungs, spasm of the bronchioles was noted in two animals (Fig. 2 *vide* Plate) whereas others showed either slight or no spasm at all. Tissue eosinophilia was either absent or scanty.

Group II B (Animals killed in the eosinophilaemic phase)—Peripheral eosinophilia was marked in all the cases. Bonemarrow eosinophilia showed an increase varying from 20 to 30 per cent (Table 3). Regarding tissue changes moderate spasm of the bronchioles was noted in two animals whereas other animals showed little or no spasm. There was a rise of tissue eosinophilia between grade I and grade III in all the cases (Table 3, and Fig. 3, *vide* Plate).

TABLE 2—SHOWING OBSERVATIONS ON SHOCK, EOSINOPHILIA (CIRCULATORY, BONE MARROW AND LUNGS) AND OTHER TISSUE CHANGES IN THE LUNGS, FOLLOWING AN INJECTION OF 0·5 MG. OF HISTAMINE (ANIMALS KILLED IN THE PRE-EOSINOPHILAEMIC PHASE)

Serial No. of guinea-pigs ...	1	2	3	4	5	6	7	8
Shock	++	+	+	+	−	+	++	±
Peripheral eosinophilia in c.mm. of blood, before killing the animal	40	25	52	42	55	60	25	40
Bone marrow eosinophilia in % of nucleated cells	30	25	25	30	28	25	35	25
Tissue changes in lungs :								
1. Spasm	++	+	+	+	−	++		+
2. Eosinophilia :								
Bronchiolar lumen ...	+	−	−	−	+	−	−	−
Submucous	+	−	+	−	+	−	−	+
Bronchiolar wall ...	+	−	+	+	−	+	+	−
Peribronchiolar ...	+	−	−	−	−	+	−	−
Interalveolar ...	+	+	−	−	+	−	−	−
Alveolar	−	−	−	−	−	−	−	−
3. Vascular evidence of periarteritis	+	++	+	++	−	+	+	+++

TABLE 3—SHOWING OBSERVATIONS ON SHOCK, EOSINOPHILIA (CIRCULATORY, BONE MARROW AND LUNGS) AND OTHER TISSUE CHANGES IN THE LUNGS, FOLLOWING AN INJECTION OF 0·5 MG. OF HISTAMINE (ANIMALS KILLED IN THE EOSINOPHILAEMIC PHASE)

Serial No. of guinea-pigs ...	1	2	3	4	5	6	7	8
Shock	+	−	−	+	−	++	−	−
Peripheral eosinophilia in c.mm. of blood before killing the animal	720 *(50)	552 *(72)	980 *(42)	600 *(36)	906 *(100)	540 *(24)	420 *(18)	672 *(48)
Bone marrow eosinophilia in % of nucleated cells	25	20	32	25	22	20	25	30
Tissue changes in lungs :								
1. Spasm	−	++	+	−	−	+	++	−
2. Eosinophilia :								
Bronchiolar lumen ...	−	+	−	−	+	++	+	++
Submucous	++	++	+	+	+	−	+	+
Bronchiolar wall ...	++	−	+	+	++	++	++	++
Peribronchiolar ...	+++	++	++	+	+	+	+	+++
Interalveolar ...	−	+	+	++	++	+	++	+
Alveolar	++	+	−	+++	−	−	−	−

* Figures in parentheses indicate the average level of basal eosinophils before injection was given.

TABLE 4—SHOWING OBSERVATIONS ON SHOCK, EOSINOPHILIA (CIRCULATORY, BONE MARROW AND LUNGS) AND OTHER TISSUE CHANGES IN THE LUNGS, FOLLOWING AN INJECTION OF 0·5 MG. OF HISTAMINE (ANIMALS KILLED IN THE POST-EOSINOPHILAEMIC PHASE)

Serial No. of guinea-pigs ...	1	2	3	4	5	6	7	8
Shock	+	+	++	+	–	–	+	–
Peripheral eosinophilia in c.mm. of blood	*(550) 90	*(700) 100	*(900) 50	*(600) 50	*(800) 100	*(900) 150	*(1100) 60	*(700) 90
Bone marrow eosinophilia in % of nucleated cells	31	8	10	25	15	12	25	20
Tissue changes in lungs :								
1. Spasm	–	–	+	–	–	+	–	–
2. Eosinophilia :								
Bronchiolar	+	+	+	+	–	+	–	–
Submucous	+	++	++	++	+	+	+	+
Bronchiolar wall ...	++	++	+++	++	+	++	+	+
Peribronchiolar ...	++	++	+++	++	++	+++	++	++
Interalveolar	++	+	++	–	+	+	–	+
Alveolar	+++	++	+	–	+	+	–	–
3. Vascular	+	+	+	–	–	+	–	–
4. Lymphoid tissue proliferation	–	+	+	–	–	+	–	–

* Figures in parentheses indicate the peak of eosinophilia attained.

Group II C (Animals killed in the posteosinophilaemic phase)—Peripheral eosinophilia came down to basal level in all the animals in the series. The highest peak of bone marrow eosinophilia was found to be associated with a high degree of blood eosinophilia that developed during the eosinophilaemic phase. The degree of bone marrow eosinophilia varied from 8 to 31 per cent (Fig. 4, *vide* Plate). However, in 4 of the animals the bone marrow eosinophilia was below 15 per cent. There was a rise of tissue eosinophilia between grade I and grade III in all the cases (Table 4).

The distribution of eosinophils in different structures of the lung tissue has been demonstrated in all the tissue studies.

Control series—The eosinophil count in six animals in the control series was noted at the scheduled interval of the corresponding experimental series. The variation did not exceed 200 per cent in any case and the bone marrow and tissue eosinophilia obviously corresponded to those of normal animals.

COMMENTS

It is difficult to formulate the mechanism of production of eosinophilia by a single injection. From the present study peripheral eosinophilia may be said to be preceded by marrow eosinophilia. During this early phase the eosinophils present in the lung tissue is minimal. Further it appears that within a few hours of marrow eosinophilia, the peripheral circulation shows increased eosinophils while bone marrow eosinophil still persists and lung eosinophils have already appeared to a considerable extent.

The final phase of the experiment reveals yet another interesting feature regarding the interrelationship of the eosinophils in the three sites studied, viz., the bone marrow, peripheral circulation and the lungs. It is observed that in this terminal phase, the circulatory eosinophilia has come down almost to the basal level but the eosinophils in the lungs have gone up considerably. The marrow eosinophilia, however, has been variable. It has come down to a basal level in half the animals while in the remaining half it has been maintained at a higher level, akin to that in preeosinophilaemic or eosinophilaemic phase.

It will thus be seen that integration of the results of induced eosinophilia tend to leave us wondering whether the behaviour of eosinophils in bone marrow, peripheral circulation and in the tissues could be consolidated into a single concept. It appears that a stimulus which produces eosinophilia, has its effect observed in the bone marrow first, where these cells are produced normally. The flooding of circulation with eosinophils within a few hours may indicate the release of these cells into the circulation with consequent infiltration in such areas which have special predilection to react to such stimuli as histamine. The subsequent increase in eosinophils in tissues, with their

disappearance from blood, may be interpreted as the fate of circulatory eosinophils. The ultimate disappearance of eosinophils from the bone-marrow during this phase may indicate that the cells have migrated to the tissues and the stimulus for any increased production of eosinophils has ceased to operate. The persistence of eosinophils in the marrow in half the animals is rather perplexing. It may be explained on the basis of persistence of some eosinophilogenic stimuli for a longer period and the susceptibility of the marrow to react in a more durable way than in others. It remains to be seen whether histaminase action or the compensatory effect of corticosteroids has any role to play in this differential pattern.

ACKNOWLEDGMENT

I am greatly indebted to Professor B. P. Trivedi and Professor S. N. De of the pathology department, Medical College, Calcutta, for their valuable suggestions and helpful criticism during the investigation. I also thankfully acknowledge the technical assistance I received from my colleague Dr. B. Chowdhury of the same department.

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A RADIOGRAPHIC STUDY OF THE CUBOID IN NEWBORN INDIAN INFANTS

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Determination of foetal age is not only important from the medicolegal aspect but is also very useful from the obstetrician and gynaecologist's point of view as regards induction of labour, selection of time for caesarean section and proper management of a gravid woman. Skeletal maturity of the foetus at the time of delivery in induced labour or caesarean section greatly influences the viability of the child and minimises neonatal risks. Such surgical procedures should be undertaken only at a time when the foetus is both physiologically and skeletally mature.

It has often been observed that the percentage of survival amongst Indian and Negro premature infants is surprisingly high as compared with the White infants of the same body weight. Christie *et al* (1941) and Christie and Nashville (1949) pointed out that greater survival of Negro infants may be due to their physiologically better maturity.

In India much work has been done on the appearance of the secondary centres of ossification and their union with the diaphysis by Hepworth (1925), Galstaun (1930 and 1937), Lall and Nat (1934), Pillai (1936), Basu (1938, 1945 and 1955), Basu and Basu (1938a and 1938b) and Lall and Townsend (1939). A survey of the literature shows that nothing significant has been done in India regarding the skeletal maturity of newborn infants ; whereas in the Continent and the States much work has been done on the ossification centres of newborn infants. Adair and Scammon (1921) studied the ossification centres of wrist, knee and ankle in 100 newborn infants (45 girls and 55 boys), but they did not mention anything about the influence of racial differences, and the effect of crown-heel length, body weight, etc., on these ossification centres. Menees and Holly (1932) studied 599 (262 males and 337 female) newborn White infants. The effect of sex and body weight was observed by these authors but they did not consider differences due to crown-heel length or race. Christie *et al* (1941) and Christie and Nashville (1949) made extensive studies of the ossification centres in newborn infants in the White and Negro races. They took into account the

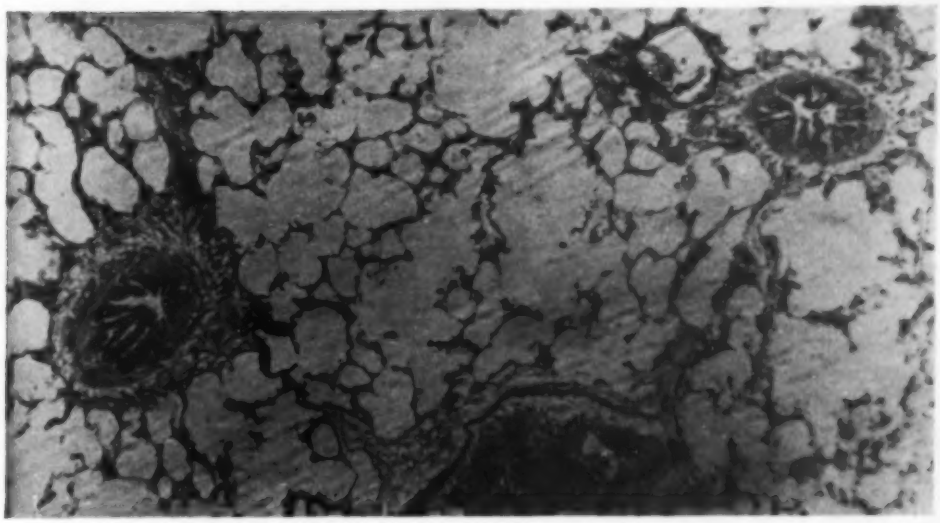

Fig. 2—Microphotograph showing lung field of a guinea-pig Note the effect of spasm on both the bronchioles present in the field. There is little eosinophilic infiltration (H. & E. × 100).

Fig. 3—Microphotograph of lung field of a guinea-pig showing cellular infiltration, both in the peribronchiolar and submucous areas, mostly by eosinophils (H. & E. × 350).

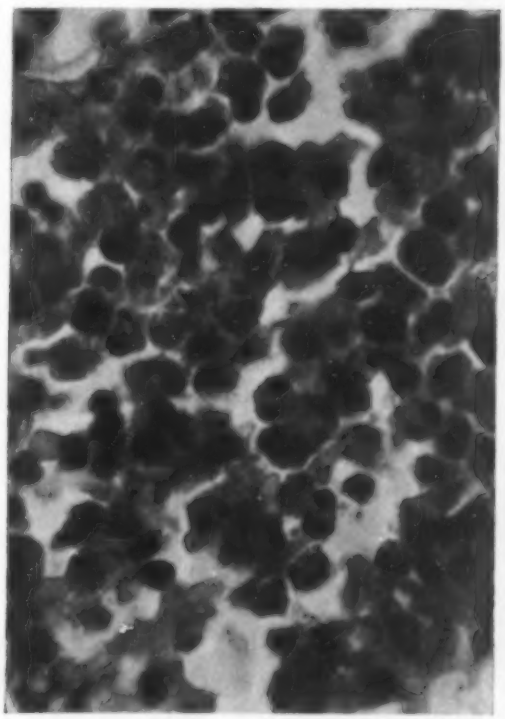

Fig. 4—Section of bone marrow showing nucleated cells most of which are eosinophils in different stages of development (Leishman stain × 800).

SEN—*Studies in Experimental Eosinophilia (p. 195)*

Fig. 1—Radiograph of foot of a newborn infant (lateral view) showing centres of ossification for the cuboid, calcaneus and talus.

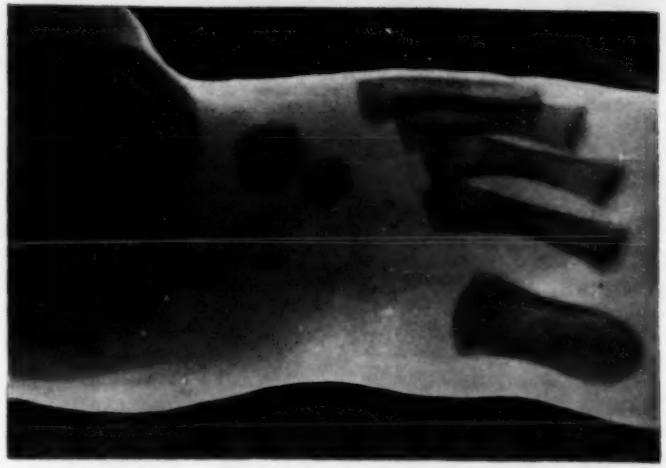

Fig. 2—Radiograph of foot of a newborn infant (anteroposterior view) showing ossification centres for the cuboid and lateral cuneiform bones.

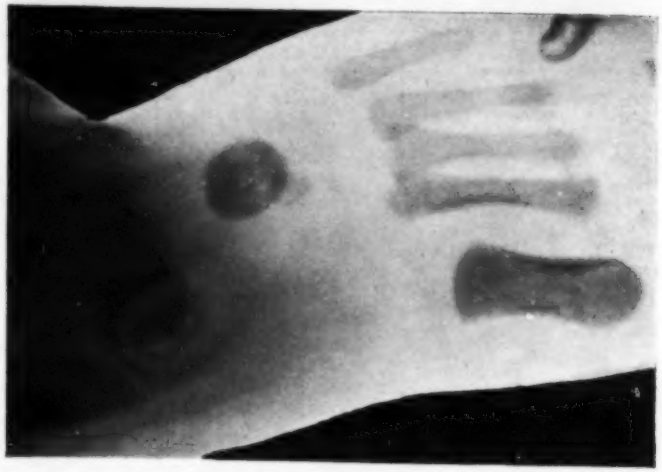

Fig. 3—Radiograph of the foot of a newborn infant showing double centres of ossification for the cuboid bone.

Fig. 4—Radiograph of the foot of a newborn infant showing multiple centres of ossification for the cuboid bone.

BHARGAVA AND GARG—*A Radiographic Study of the Cuboid in Newborn Indian Infants (p. 200)*

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birth-weight, crown-heel length and also emphasised on the parity of the mother and the racial effect on the skeletal maturity of newborn infants. Stampbel and Tschernne (1930), Carn *et al* (1930 and 1940), Dunham *et al* (1941) and Kessler *et al* (1950) also made more or less similar studies in newborn infants of White races.

As already stated, the literature is very scanty on Indian newborn infants. Garg (1955) made a radiographic study of the various ossification centres of the limbs of newborn infants at Indore. Indarjit (1957) also studied the ossification centres in 20 newborn Punjabi infants and a few foetuses.

Material and Method

Three hundred newborn infants (160 males and 140 females) were subjected to radiographic examination for studying the various centres of ossification of the foot. A report of 220 cases of this series which is being published elsewhere (Bhargava and Garg 1960), deals with the various ossification centres of the foot in general. As the centre for the cuboid was present in a sufficiently large number of cases, it was thought desirable to conduct a detailed radiographic study of this bone at birth and to see the effect of various factors such as body weight, crown-heel length, sex, race, and parity of the mother on the ossific centre of this bone.

The crown-heel length and body weight were measured and recorded by standard techniques. All the radiographs were taken within 2 hours of birth. In all cases the peak kilovoltage was kept constant at 34 ; milliamperage was 100, and the distance of the tube from the subject was kept constant at 14 inches. Exposure time in all the cases was 1/20 second. Both anteroposterior and lateral views were taken.

Grouping of Cases

The cases were grouped according to body weight, crown-heel length, gestational age, sex, and parity of the mother. The birth-weight, crown-heel length and gestational age groups were subdivided as follows :

BIRTH-WEIGHT :

Group I.—Less than 2000 g.
Group II.—Between 2000 and 2499 g.
Group III.—Between 2500 and 2999 g.
Group IV.—Between 3000 and 3499 g.
Group V.—Between 3500 and 3999 g.
Group VI.—4000 g. or more.

CROWN-HEEL LENGTH :

Group I.—Less than 47·0 cm.
Group II.—Between 47·0 and 50·0 cm.
Group III.—50·0 cm. or more.

GESTATIONAL AGE :

Group I.—Less than 8 months.
Group II.—Between 8 and 9 months.
Group III.—9 months or over.

Observations

The presence of the ossification centre for the cuboid in newborn infants, according to crown-heel length, body weight and gestational age groups has been found to be as shown in Tables 1 and 2.

TABLE 1—SHOWING PERCENTAGE OF CASES IN VARIOUS GROUPS HAVING CENTRE FOR THE CUBOID BONE AT BIRTH IN A RADIOGRAPHIC STUDY OF 100 NEWBORN MALE INFANTS

Birth-weight group	Crown-heel length group	Gestational age group	Total cases studied	No. of cases showing centre for the cuboid	Percentage
I	I	I*			
		II	20	3	15·0
		III*			
	II	I*			
		II	3	0	00·0
		III	2	1	50·0
	III	I*, II* & III*			
II	I	I	1	0	00·0
		II	8	2	25·0
		III	7	2	28·0
	II	I*			
		II	5	2	40·0
		III	15	9	60·0
	III	I* & II*			
		III	5	3	60·0
III	I	I			
		II	2	0	00·0
		III*	8	3	37·5
	II	I*			
		II	10	5	50·0
		III	15	10	66·6
	III	I*			
		II	10	6	60·0
		III	5	3	60·0
IV	I	I*, II* & III*			
	II	I*			
		II	4	2	50·0
		III	6	5	83·3
	III	I	1	0	00·0
		II	4	2	50·0
		III	10	8	80·0
V	I	I*, II* & III*			
	II	I* & II*			
		III	8	6	75·0
	III	I*			
		II	2	2	100·0
		III	10	9	90·0
VI*					

* Material not available.

TABLE 2—SHOWING PERCENTAGE OF CASES IN VARIOUS GROUPS HAVING CENTRE FOR THE CUBOID BONE AT BIRTH IN A RADIOGRAPHIC STUDY OF 140 NEWBORN FEMALE INFANTS

Birth-weight group	Crown-heel length group	Gestational age group	Total cases studied	No. of cases showing centre for the cuboid	Percentage
I	I	I	8	1	12·5
		II	7	1	14·2
		III*			
	II	I*, II* & III*			
	III	I*, II* & III*			
II	I	I*			
		II	5	1	20·00
		III	20	4	20·00
	II	I* & II*			
		III	10	5	50·0
	III	I*			
		II	1	0	00·0
		III	4	2	50·0
III	I	I* & II*			
		III	10	4	40·0
	II	I*			
		II	5	3	60·0
		III	25	17	68·0
	III	I* & II*			
		III	5	4	80·0
IV	I	I* & II*			
		III	5	12	40·00
	II	I*			
		II	4	2	50·0
		III	8	7	87·5
	III	I*			
		II	5	5	100·0
		III	3	3	100·0
V	I* & II*				
	III	I* & II*			
		III	15	15	100·0
VI*					

* Material not available.

In the 300 newborn infants the centre of ossification for the cuboid bone was found by radiography to be present in 160 cases, i.e., in 53·3 per cent of the total infants studied. At birth, the percentage of the male infants showing the centre was 51·8, while that of female infants showing the centre was 55.

Fig. 1 (*vide* Plate) shows centres of ossification for the cuboid, calcaneus and talus. Fig. 2 (*vide* Plate) shows centres of ossification for the cuboid and cuneiform bones. In 20 cases there were two centres of ossification for the cuboid bone (Fig. 3, *vide* Plate) and in 3 exceptional cases more than two centres, and in one case as many as four centres (Fig. 4, *vide* Plate) could be visualised.

In the body-weight group I the centre was present in 16 per cent male and 13·3 per cent female infants. In body-weight group II the centre was observed in 45 per cent male and 30 per cent female infants, but in group III the centre was visualised in 68 per cent male and 80 per cent female infants. In groups IV and V also a preponderance of female infants showing centre for the cuboid was evident. In group IV the percentages were 68 for male and 80 for female infants. In group V they were 91·6 for male and 100 for female infants. No cases in group VI were available.

The findings of the present work are compared with those of Christie and Nashville (1949) in Table 3.

DISCUSSIONS

Effect of birth-weight—Menees and Holly (1932) studied ossification centres in 262 male and 337 female newborn infants. In their series, infants weighing less than 2,000 g. were excluded but no grouping according to birth-weight was done. Vogat and Vickers (1939) and Kelly and Reynolds (1947) also studied the ossification centres in newborn infants but they also did not observe the effect of birth-weight on these centres.

TABLE 3—SHOWING COMPARATIVE FIGURES OF CHRISTIE AND NASHVILLE AND THE PRESENT AUTHORS

Names of workers	Race in which ossification centre was studied	Sex	Percentage of cases showing centres in various birth-weight groups					
			I	II	III	IV	V	VI
Christie and Nashville	White	Male	0·0	6·2	14·7	39·8	44·3	60·0
		Female	0·0	37·5	51·1	65·2	70·4	76·2
Christie and Nashville	Negro	Male	0·0	23·1	43·8	58·0	68·1	100·0
		Female	21·4	37·5	68·0	78·2	81·8	78·0
Bhargava and Garg	Indian	Male	16·0	45·0	54·0	68·0	85·0	—
		Female	13·3	30·0	62·1	80·0	100·0	—

Christie and Nashville (1949) divided their cases into six groups according to birth-weight and demonstrated a direct positive association of skeletal maturity with birth-weight. Subsequently Kessler and Scott (1950) confirmed their findings. The present study is in accord with those of Christie and Nashville (*loc. cit.*) (Table 3) and Kessler and Scott (*loc. cit.*). It can be generalised that the birth-weight has a direct bearing on the skeletal maturity of the infant. The higher the birth weight the greater the skeletal maturity.

Effect of parity—Previous workers such as Adair (1918), Menees and Holly (1932), Vogat and Vicker (1938), Kelly and Reynolds (1947) did not consider the effect of parity of mother on the ossification centres present at birth. Christie and Nashville (1949) while considering the effect of other factors also took into account this factor but could not establish any constant association between the parity of the mother and the skeletal maturity of the infant. In the present work no definite relationship between the parity and the skeletal maturity could be established. As a matter of fact, this factor can be critically studied only if the infants of the same mother are examined in subsequent deliveries.

Effect of gestational age—A positive association was demonstrated by Christie and Nashville (1949) who showed that with the increase in the gestational age the skeletal maturity increases. Subsequently this fact has been confirmed by a number of workers. The present findings lend support to the existing view.

Effect of crown-heel length—A good number of workers have not taken this factor into account. Christie and Nashville (1949) observed that the skeletal maturity increases in direct proportion to the crown-heel length of the infant. Their views were later confimed by Kessler and Scott (1950). The present findings are not in absolute agreement with those of the above workers, as evident from Tables 1 and 2. The number of cases studied (300) are not statistically sufficient to give any significant result. A more extensive study is therefore suggested.

Effect of race—A large number of workers such as Galstaun (1930 and 1937), Lall and Nat (1934), Barret (1935-36) has shown that epiphyseal union in Indians takes place earlier as compared with the white races, but very little has been done in India to demonstrate the effect of race on skeletal maturity at birth. Garg (1955), while studying 200 newborn infants, observed that the Indian infants are skeletally more mature than white newborn infants. Indarjit (1957), while studying 20 Punjabi newborn infants and a few foetuses, stated that he did not observe such greater skeletal maturity in Indian newborn infants. In the present study and also in an earlier work of the authors (1960) a comparison has been made with the findings of Christie and Nashville (1949), from which it is evident that the Indian newborn infants definitely attain better skeletal maturity at birth than the newborn infants of White races.

Effect of sex—It has long been established that girls are physiologically and skeletally more mature than boys of the same age group. Pryor (1928) observed such a direct relationship between sex and skeletal maturity. However Hill (1939) did not observe any appreciable difference in the appearance of the ossification centres up to 6 lunar months of intra-uterine life, but in the later months of pregnancy he did observe a greater percentage of centres in females.

Hess and Weinstock (1925), Christie and Nashville (1949), and Kessler and Scott (1950) are of opinion that the female newborn infants are skeletally more mature than male infants. In the present study not much difference in skeletal maturity between the male and female infants in lower birth-weight groups was noticed but in cases with higher birth-weight groups a definite increase in the percentage of the cases showing the presence of the centre for the cuboid bone was recorded, indicating greater skeletal maturity of female newborn infants.

Bilateral symmetry in ossification—Bilateral symmetry in the process of ossification of the cuboid was uniformly observed except in two cases where the centre was present only on one side.

Summary

Ossification centre for the cuboid was studied radiographically in 300 newborn infants (160 males and 140 females). The centre could be visualised in 160 cases (83 males and 77 females). The effects of sex, race, birth-weight, crown-heel length, parity of the mother, etc., have been discussed. The present work has been compared with that of previous workers.

Indian infants are found skeletally more mature than White infants at birth and *at par* with Negro infants. In all those cases where the centre for the cuboid can be visualised radiographically induction of labour or caesarean section may be done without hesitation, as the foetus has obtained a high degree of physiological maturity. Ossification centre for the cuboid may also help in certifying the age of the foetus because of its specific time of appearance during the ninth month of intra-uterine life.

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DIAGNOSIS OF OVULATION AND DETERMINATION OF TIME OF OVULATION BY FERN-CRYSTALLISATION TEST OF CERVICAL MUCUS*

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With the realisation of the importance of ovulation in the management of sterility, attempts were made to devise some accurate method for ascertaining the time of ovulation in a woman. It is not possible to make any direct study of ovulation and any assessment has to be made by indirect methods only. The methods available at present for the determination of ovulation, such as endometrial biopsy, basal body temperature chart, biochemical tests, cervical and vaginal changes and peritoneoscopy, involve elaborate, costly and/or time-consuming procedures.

The cervical mucus provides reliable evidence of the changes that take place in the reproductive organs during the menstrual cycle as a result of various endocrine secretions. Papanicolaou (1946) demonstrated that when the cervical mucus is spread on a glass slide and allowed to dry, crystallisation with arborisation takes place and this is most abundant at the time of ovulation. Crystallisation and arborisation of the cervical mucus are an expression of oestrogen activity, the electrolyte substance in the mucus is sodium chloride which is present in large amount only during the period of oestrogen stimulation. A thick cervical smear during oestrogen activity, that is before ovulation, shows arborisation, the pattern of which closely resembles palm leaf and is therefore known as 'palm leaf phenomenon' or 'PL reaction'. The initial crystallisation which starts about the 6th day of the cycle is delicate and light but with the increase of follicular activity the amount of oestrogen secretion increases and the pattern becomes intense and heavy. Progesterone inhibits PL reaction and produces a cellular pattern; hence, after ovulation the PL pattern gradually fades away with the appearance of cellularity as oestrogen is inactivated by progesterone. If a

* Part of the Thesis submitted by Sharda Devi for the degree of M.S., Patna University.

strong positive PL reaction is followed by cellularity, the conclusion can be drawn with a good deal of certainty that a normally functioning corpus luteum is present and therefore ovulation has taken place.

Zondek and Rozin (1954) confirmed the accuracy, reliability and also the basis of the test. They observed that arborisation *per se* is a non-specific process but has specific significance when it occurs in the cervical mucus for it depends on oestrogenic hormone. Fern crystallisation is absent or only slightly present where the ovarian activity is low and therefore the oestrogen level in the blood is below par. In case of anovulatory menstruation the PL reaction persists throughout the cycle. One injection of 0·3 mg. of oestradiol is capable of producing arborisation in a castrated woman and administration of progesterone makes this reaction disappear. It has been observed that 15 mg. of progesterone is capable of inhibiting 1 mg. of oestrogen.

Roland (1952) found that arborisation in the cervical mucus occurs between the 5th and 7th day and the 22nd day of the cycle. He recommended that the appearance of arborisation of cervical mucus be recognised for determining the occurrence of ovulation, the time of ovulation and for diagnosis of early pregnancy. The greatest advantage of this test is its simplicity and accuracy.

When the 'PL' reaction is sparse it is expressed as 'PL'+ (Fig. 1, *vide* Plate), when moderate 'PL'+ + (Fig. 2, *vide* Plate) and when the pattern is dense and spread all over the slide, it is 'PL'+ + + (Fig. 3, *vide* Plate).

Diagnosis of ovulation has great clinical significance, as in about 5 per cent of cases of sterility in women there is an ovulatory menstruation (Sharman, 1947; Stallworthy, 1949). The ovum remains fertilisable only for about 24-48 hours after it has been discharged from the ovary—hence the importance of determining the time of ovulation.

Material and Method

The present work was carried out in the year 1956 in the Department of Obstetrics and Gynaecology, Patna Medical College Hospital. The study included both primary and secondary sterility cases attending the Gynaecological Out-Patients Department. Ten normal women having children every 1½-2 years and menstruating normally were taken as control. During the course of investigation if an obvious cause for the sterility was found, either in the form of general ill health or local pelvic disease, this was treated and only cases showing no definite general disease or gynaecological abnormality were included in this study. The selected patient was instructed to come to the outpatients department two days after the cessation of menstruation, which in the majority of cases was the 7th or 8th day of the cycle. Thereafter they were asked to come at intervals of 5 days till the onset of the next period. Cervical mucus was examined at each visit. For obtaining the cervical mucus, a Cusco's bivalved speculum was introduced, the cervix exposed and dried with a sterile swab, a thin cotton tipped applicator was then introduced into the cervical canal and with a rotatory movement the mucus was removed. It was then gently rolled over a clean microscopic slide. No anaesthesia or analgesia was used.

The smear was left to dry in the air for from ½ to 1 hour and then examined under the microscope, first under low power and then under high power. At each visit the density of arborisation and element of cellularity were noted. It is essential to examine the slide under high power to differentiate pseudo-arborisation from true crystal formation. In pseudo-arborisation there are parallel branchings but no teeth-like processes.

A moderate or heavy crystallisation in the first phase of the menstrual cycle followed by gradual disappearance of crystallisation with appearance of a completely cellular pattern indicates that ovulation has taken place, i.e., positive reaction. If the 'palm-leaf' (PL) pattern persists throughout the cycle it means that the menstruation is anovulatory in nature, i.e., negative reaction. In the case where the PL pattern persisted throughout the cycle, the test was repeated and if still found negative or weakly positive, endometrial biopsy was carried out to confirm the result.

Results

Cervical mucus from 75 cases of sterility was examined for fern-crystallisation, in 70 cases every fifth day and in 5 cases every day of the cycle, starting from two days after the stoppage of menstrual flow. Ten young multiparous women who were menstruating regularly were also examined as control cases. In all these cases the women reported the date of onset of the next menstrual period.

Of the 70 cases of sterility who had the cervical mucus examined every 5th day, 6 cases were also examined on 14th day of the cycle, and three showed both PL reaction and cellularity (mixed pattern), two had PL+ + and one PL+ + +. The three cases showing the mixed pattern had the onset of the next period on the 28th day. Taking

the calculated date of ovulation as 14±1 days before the next period these women probably ovulated on the 12th or 13th day of the cycle, that is, cellularity appeared 14-48 hours after ovulation. The one showing PL+++ continued to have PL++ even on the 24th day of the cycle. Repeated tests in this case showed the same type of result and endometrial biopsy later confirmed this as a case of anovulatory menstruation. The two cases showing PL++ showed a mixed pattern by the 19th day.

On the 15th day of the cycle 17 cases had the mucus examined and 13 showed a mixed pattern ; 9 of these started menstruating on the 28th day, one on the 29th day, two on the 30th day and one on 33rd day. In the last 4 cases endometrial biopsy was also done and it showed the secretory phase. In the 9 cases who started menstruating on the 28th day, complete cellularity was observed on 20th day of the cycle. The one case where the onset of the next menstrual period was on 33rd day evidently had a long luteal phase of 18 days which is unusual. Three of the 17 cases showed PL++ and one PL+++. One of the PL++ cases continued to have PL+. She started her next period on the 28th day and eventually she proved to be a case of anovulatory menstruation, both by repeated cervical mucus examination and endometrial biopsy carried out on the day of onset of menstruation in one of the cycles. In another case the mixed pattern was noted on the 20th day and she menstruated on the 32nd day, showing that she had either a prolonged proliferative phase or late appearance of cellularity. If she ovulated 14 days before the next due period in this case also, cellularity appeared 48 hours after ovulation. One patient with PL+++ had a 30 day cycle, and mixed pattern appeared on the 20th day and complete cellularity by the 25th day. In this case cells were observed 4 days after ovulation, but as the mucus was examined only every 5th day it is possible that cellularity may have started one or two days earlier.

Cervical smear was examined in 14 cases on the 16th day of the cycle and 12 showed mixed pattern. Of these 6 had 28 day cycle while the other had 30 day cycle. One continued to have PL++ throughout the cycle which later proved to be a case of anovulatory menstruation. One case showed PL++++. She had mixed pattern on the 20th day. She started the next period on the 28th day and endometrial biopsy showed the secretory phase. This may be a case with prolonged proliferative phase or late appearance of cellularity.

Twenty-four cases were examined on the 17th day, all exhibited mixed pattern. Of these 6 started the next menstruation on the 28th day, 2 on the 29th day and 16 on the 30th day.

In 40 cases cellularity appeared within 24-48 hours after ovulation as calculated from the onset of the next menstrual period. According to Zondek and Rozin (1954) the production of progesterone during the first week after ovulation is insufficient to counteract the action of oestrogen which is also produced by the corpus luteum, and it is only in the last 5 days of the menstrual cycle that there is sufficient amount of progesterone to inhibit PL reaction and produce cellularity. Our findings agree with those of Urdan and Kurzon (1956) who found a mixed pattern within 24 hours of ovulation and complete cellularity 3-4 days later. Therefore the time of ovulation can be correctly diagnosed by examining the cervical mucus.

Summary and Conclusions

Cervical mucus from 75 cases of sterility was examined for fern-crystallisation—in 70 cases every fifth day and in 5 every day—starting from 2 days after the stoppage of menstrual flow.

Palm-leaf pattern was present in every case in the proliferative phase of the cycle.

In 66 cases cellularity appeared 12-13 days before the next menstrual flow appeared. Where the patient had a cycle of more than 28 days, cellularity also appeared later showing that the proliferative phase was prolonged.

In 2 cases the cellular pattern appeared 10 days and in 3 cases 7 days prior to the onset of the next period. In 4 cases the PL pattern persisted throughout the cycle in two successive periods and these were later proved by endometrial biopsy to be cases of anovulatory cycle.

In 4 of the 5 cases where the cervical mucus was examined daily, cellularity appeared 24 hours and in the 5th case 48 hours after the calculated date of ovulation.

All the 10 control cases showed cellularity within 24-48 hours after the calculated date of ovulation.

Fern-crystallisation test of cervical mucus is a simple inexpensive and fairly accurate method of diagnosing whether ovulation has taken place or not and also in finding out the time of ovulation.

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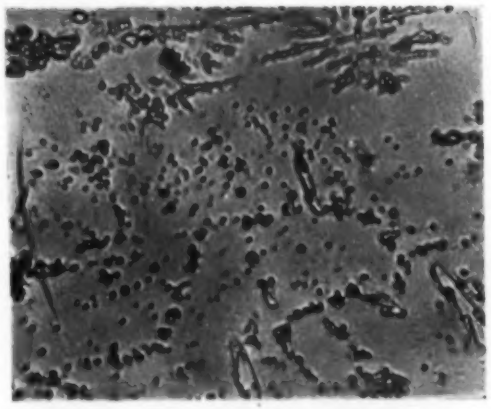

Fig. 1—Showing PL reaction sparse (+).

Fig. 2—Showing PL reaction moderate (++).

Fig. 3—Showing PL reaction dense (+++).

JOHN AND DEVI—*Diagnosis of Ovulation and Determination of Time of Ovulation by Fern-Crystallisation Test of Cervical Mucus* (p. 206)

Fig. 1—Showing typical adenoma sebaceum in face over nose, cheeks and chin.

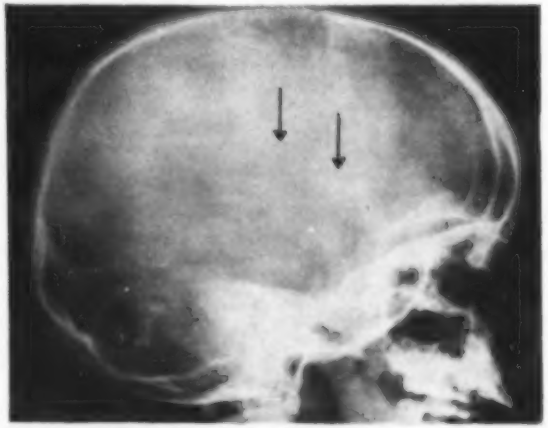

Fig. 2—Skiagram of skull showing calcification in brain (indicated by arrow).

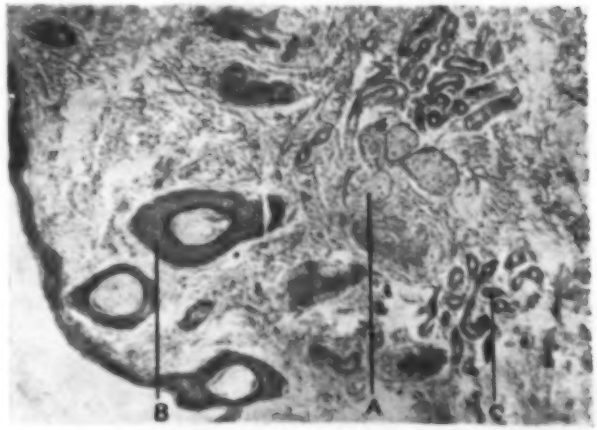

Fig. 3—Photomicrograph of skin showing (A) hyperplastic sebaceous glands, (B) large number of hair follicles and (C) many sweat glands. Blood vessels are normal.

CHANDA—*Tuberous Sclerosis (Bourneville's Disease)* (p. 215)

(Left) Fig. 1—Showing the prominent sternum and the long tapering fingers.

(Above) Fig. 2—Showing skiagram of the left foot. Note that the bones which are appreciably long are not thick.

Fig. 3—Showing skiagram of both hands. Note that the bones which appear quite long are not thick.

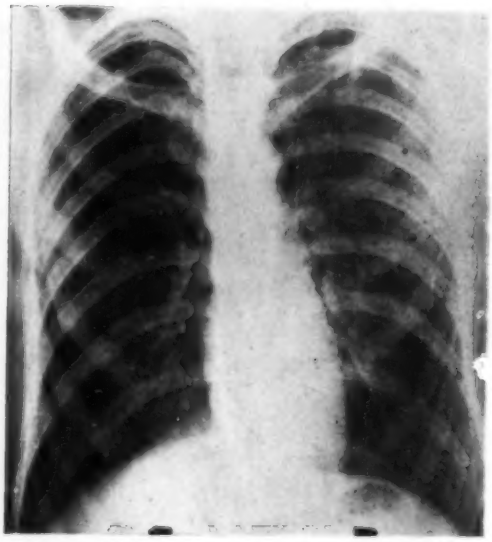

Fig. 4—Showing skiagram of the chest (anteroposterior view). Note emphysematous appearance of the lungs.

CONSUL *et al—Marfan's Syndrome (p. 218)*

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EFFECT OF ALCOHOL IN COLD CLIMATE

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Use of alcohol in extreme cold climate is considered beneficial as it gives subjective feeling of warmth to its user. The object of the present work was to find out the thermodynamic balance after the use of two ounces of rum in a climate with temperature below freezing point. Rum consists of 40 per cent alcohol with a caloric value of 157·5.

Method and Material

Twenty subjects in age group 20 to 30 (average 25·4) years were taken in cold regions with climatic conditions as specified below. Average weight of the subjects was 144 pounds, and average height 5 ft. 6 in. At the time of observation, the average outside temperature was 28°F (dry bulb), with average wind velocity of 10 miles per hour. The subjects were clothed in warm trousers, shirts, pullovers and blouses. They had cap comforters on head and boots with warm socks on feet. The only exposed parts were the face and hands.

Observations consisted of average skin temperature taken by thermocouples of 30 gauge copper constantin, rectal temperature by clinical thermometer and metabolic rate by Sanborn 'metabulator.' Additional digital temperature was noted by thermocouple taped to finger pads of first and third digits. Initial readings were taken in a room warmed by central heating with fire, with an average dry bulb thermometer reading of 52°F, after which each subject was made to lie on a canvas cot outside the barracks in the wide open with both upper limbs hanging on either side of the camp cot. Skin, digital and rectal temperatures, and metabolic rate were recorded half-hourly for 3 hours.

Next evening the whole experimental procedure was repeated with the only difference that each subject was given 2 ounces of rum which was taken in a gulp just before he was exposed to cold outside the barracks.

Comparative subjective feeling of cold for each individual was recorded after the experiment was over.

Results

Average skin, digital and rectal temperatures and metabolic rate, with and without the use of alcohol are shown in Figs. 1, 2, 3, and 4. Whenever the difference was found significant, it was noted against that time.

From Fig. 1 it will be seen that both with and without alcohol, average skin temperature fell; but 60 minutes after exposure to cold, on taking alcohol the average skin temperature was significantly higher and this tendency persisted till 120 minutes, after which skin temperature fell to a

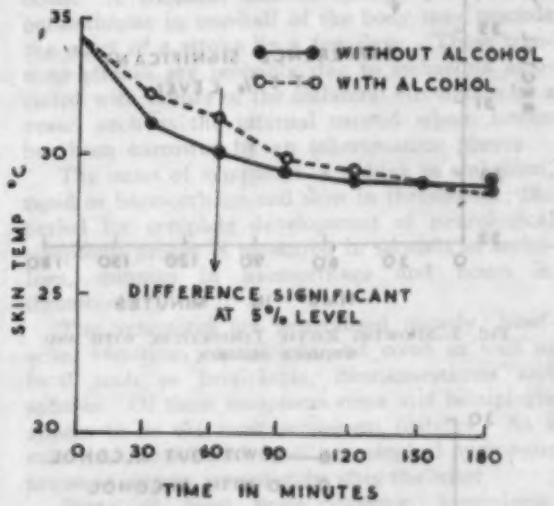

Fig. 1—Showing Skin Temperature with and without Alcohol

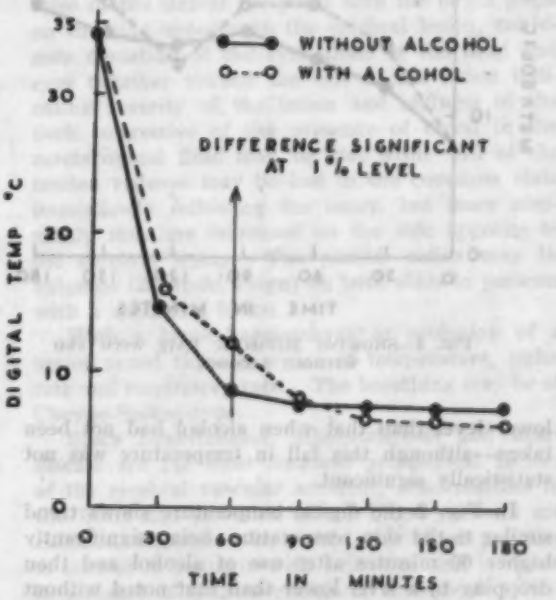

Fig. 2—Showing Digital Temperature with and without Alcohol

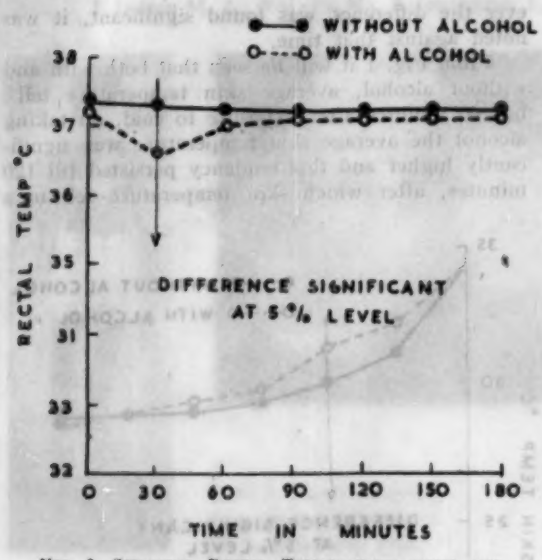

FIG. 3—SHOWING RECTAL TEMPERATURE WITH AND WITHOUT ALCOHOL

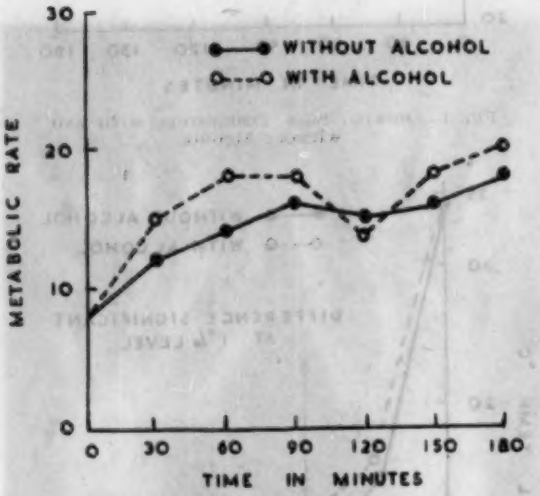

FIG. 4—SHOWING METABOLIC RATE WITH AND WITHOUT ALCOHOL

lower level than that when alcohol had not been taken—although this fall in temperature was not statistically significant.

In Fig. 2 the digital temperature shows trend similar to the skin temperature, being significantly higher 60 minutes after use of alcohol and then dropping to a level lower than that noted without the use of alcohol—again this difference was not statistically significant.

Fig. 3 shows that rectal temperature remained more or less static throughout, except after 30 minutes, when it was significantly lower after the use of alcohol.

Fig. 4 shows no significant difference in metabolic rates recorded with and without alcohol, although higher values after use of alcohol are evident throughout, except after 120 minutes.

Most of the subjects felt less cold up to about 90 minutes after the use of alcohol, but later on they felt much more cold with alcohol than without it.

DISCUSSION

Alcohol causes cutaneous vasodilatation which is evident in from 30 to 60 minutes after its use. This vasodilatation gives a sense of warmth, but causes increase of thermal conductance. Burton and Bazett (1936) and Herrington *et al* (1937) observed that co-efficient of conductance increased from 10 in vasoconstriction to 30 in vasodilatation. The significantly increased skin and digital temperature up to 60 minutes after use of alcohol represent a shift in the body thermal gradient. The alteration would result in a warmer sensation, but radiative, conductive, and convective heat losses are greater in colder environments. The loss of stored heat is manifested by significant fall in rectal temperature after the use of alcohol.

Once the phase of vasodilatation was over, protective mechanisms of peripheral vasoconstriction come into force, causing a fall of skin and digital temperature to a lower level than that seen without the use of alcohol. The vasoconstriction was enough to retard loss of body heat, as is seen from rectal temperature which came up to the normal level.

Vasoconstriction is most prominent in fingers and toes and, as shown by the results of this experiment, becomes more acute after the vasodilatation effect of alcohol disappears. Use of alcohol may, therefore, be the predisposing factor for the onset of frost bite if the subject is exposed to severe cold just after drinking, as the adverse effects of alcohol after 2 ounces of rum take about 3 hours to disappear. It is true that there is an initial sense of warmth, but it is followed by increased loss of body heat which may be responsible for some of the adverse pathological effects of cold.

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PRACTITIONERS' SERIES

CEREBRAL VASCULAR ACCIDENT (STROKE)

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A cerebral vascular accident may arise from haemorrhage, thrombosis or embolism. The end result of these disturbances is sudden cerebral ischaemia with consequent anoxia. No organ in the body is so sensitive to ischaemia as is the brain. If the anoxia is severe the nerve cells may suffer irreparable damage in the course of a few minutes.

The vast majority of haemorrhages into the brain is the result of the rupture of arteries caused by hypertension, usually of the primary or 'essential' variety. The attack is usually related to exertion or emotional excitement probably producing sudden changes in the tension in the vessels.

Atherosclerosis is the most common cause of cerebral thrombosis. The atheromatous plaques slow down the blood flow distal to the narrowing and thus predispose to thrombosis. The attack tends to occur when the circulation is less active, e.g., during sleep, after exhaustion and when an habitually high blood pressure is temporarily lowered, e.g., after violent purgation, haemorrhage or myocardial infarction. Diastolic hypertension of the 'essential' type with which it is often associated, accelerates atherosclerosis.

Cerebral embolism is most commonly associated with heart disease, atrial fibrillation and myocardial infarction. The attack may occur at any time, during sleep or waking hours.

The most common site of a cerebral haemorrhage is the basal ganglia, usually in the region of the internal capsule with resulting hemiplegia. The effused blood destroys cerebral tissues and may rupture into the lateral ventricles or form a clot.

The main site of obstruction in cerebral thrombosis is the extracerebral arteries, particularly the internal carotid. This site is commonly overlooked because of failure to palpate the artery in the neck. The occlusion of a cerebral artery results in ischaemia of the brain tissue supplied by that vessel and oedema and congestion of the neighbouring areas. The oedema subsides and the affected brain tissue undergoes necrosis or infarct formation.

In cerebral embolism the embolus usually passes into the left carotid artery and lodges in the middle cerebral producing occlusion of the vessel.

The most common cause of a cerebral vascular accident is thrombosis and the least common is embolism. Both haemorrhage and thrombosis usually occur in men between the age of forty-five and sixty. Compared with these embolism is more frequently seen in persons below forty years of age.

Prodromal symptoms are extremely rare and when present usually presage the onset of a thrombosis. A transient loss of speech, paralyses or paraesthesias in one-half of the body may precede the onset of a stroke by a few days. These transient strokes are probably due to ischaemia associated with failure of the collateral circulation of a vessel such as the internal carotid whose lumen has been narrowed by an atheromatous plaque.

The onset of symptoms is sudden in embolism, rapid in haemorrhage and slow in thrombosis ; the period for complete development of neurological symptoms proper is measured in seconds in embolism, minutes in haemorrhage and hours in thrombosis.

The symptoms are generalised namely, headache, vomiting, convulsions and coma as well as focal such as hemiplegia, hemianaesthesia and aphasia. Of these symptoms coma and hemiplegia appear to be the most prominent features. As a rule the general and focal neurological symptoms are most intense immediately after the onset.

Signs of focal brain damage, hemiplegia, hemianaesthesia, aphasia and the like, related to the site of the lesion are found to be present. Inequalities in the size of the pupil with the larger pupil on the side opposite to the cerebral lesion, conjugate deviation of the eyes alone or the head and eyes together toward the side of the lesion indicating severity of the lesion and stiffness of the neck suggestive of the presence of blood in the cerebrospinal fluid may be met with. All of the tendon reflexes may be lost in the comatose state immediately following the onset, but more commonly they are increased on the side opposite to the cerebral lesion. The plantar reflex may be extensor (Babinski's sign) on both sides in patients with a unilateral lesion.

With a large haemorrhage or occlusion of a major vessel there is a rise of temperature, pulse rate and respiratory rate. The breathing may be of Cheyne-Stokes type.

Since hypertension, atherosclerosis and heart disease are the most frequent aetiological factors of the cerebral vascular accident, abnormalities in the heart and elevation of the blood pressure are common findings. As a rule, the blood pressure is normal in patients with embolism and is raised in patients with haemorrhage or thrombosis.

The cerebrospinal fluid pressure is normal in patients with cerebral embolism or thrombosis but

it is raised in patients with haemorrhage. The cerebrospinal fluid is bloody in the vast majority of cases of cerebral haemorrhage and occasionally in cases of embolism. It is clear in cerebral thrombosis.

The diagnosis of a cerebral vascular accident is made by the more or less sudden appearance of a hemiplegia with or without unconsciousness in a patient with hypertension or other evidence of cardiovascular disease.

The diagnosis of cerebral embolism is indicated by the suddenness of the onset of symptoms and evidence of a likely source of an embolus or of emboli elsewhere.

In the diagnosis of cerebral thrombosis the most important factor is the history of prodromal or past transient episodes. The nature of onset is slow and palpation may reveal lack of carotid pulsation.

Cerebral haemorrhage is diagnosed by the rapidity of the onset of symptoms, convulsions, severe headache or vomiting at the onset, Cheyne-Stokes respiration and stiffness of the neck. A bloody carebrospinal fluid confirms the diagnosis of haemorrhage.

The prognosis for life is grave if there has been a haemorrhage of any appreciable size or if a major vessel is occluded by a thrombus or embolus. In the nonfatal cases there is some improvement in the focal neurological signs which takes place slowly. Usually the patient is left with some permanent residue. The attack may recur.

The prevention of vascular accidents within the brain is a problem. The fear of a stroke in a patient with a family history is not an inconsiderable cause of its occurrence. The psychological handling of such a case is important. In the presence of hypertension or arterial disease the only measure which can in any way tend to safeguard the patient from a stroke is moderation in all things ; diet should be restricted chiefly in quantity with low fat intake ; cigarette smoking is to be cut down ; overindulgence in alcohol is to be condemned. The patient is asked not to overexert himself nor engage in anxious or exciting activity.

Skilful nursing care is essential in proper management of a case. Called to attend a patient in coma the physician's first duty will be to establish and maintain an adequate air-way by placing the patient in either the lateral or the prone position with the head to the side. The optimal position is the lateral and prone which not only provides a free airway but also facilitates drainage of materials contaminating the respiratory tract. The upper respiratory tract should be kept free of obstruction by frequent nasopharyngeal suction if necessary. The patient should be fed through an indwelling stomach catheter *via* the nose with 4 ounces (120 ml.) of water and 4 drams (16 g.) of glucose, every 2 hours, for the first 48 hours. Later, milk is substituted for the water. If coma is prolonged 45 gr. (3 g.) of common salt are added to the daily diet with vitamin supplements (such as protovite drops). The tube should be aspirated before each two-hour feeding to exclude the possibility of gastric retention. Oral feeding should be begun only when the patient is completely able to swallow. To avoid serious complications care of the urinary bladder should be instituted as soon as possible. An indwelling catheter may be used as constant drip or clamped and urine allowed to drain every 4 hours. It prevents overdistention, avoids the urethral trauma caused by frequent catheterisation and minimises infection. This form of bladder care can be continued for 2 weeks. Bowel function should be maintained. A daily small dose of mineral oil is advisable. Glycerine suppositories or saline enemas should be given every 3 days if there are no movements in the interval. The mouth should be cleansed regularly with half-strength hydrogen peroxide. The eyes should be protected. Sterile liquid paraffin is to be dropped in the half open or wide open eyes. As decubitus ulcers may develop within 12 hours, measures must be taken promptly for their prevention. It is essential that no area of the body be exposed to pressure for any appreciable period. The patient should be turned from side to side every 2 hours night and day and this must be done by lifting, not by dragging. This turning procedure minimises the possibilities for development not only of bedsores but also of pulmonary congestion and pneumonia. The skin should be kept as clean and dry as possible by daily washing with soap and water, followed by the application of methylated spirit. The skin should be dried by fairly vigorous rubbing. Bed sheets must be kept free from wrinkles. For the patient who is incontinent, the area must be cleaned and dried after each soiling and small disposable pads kept in the area to prevent soaking of the bed clothes and mattress. Comatose patients are very susceptible to burns and great care should be taken to avoid burning the skin with hot water bottles or heating devices of any sort. Penicillin in dose of 1 million units should be given daily by injection to prevent intercurrent infection.

There is no very satisfactory medical treatment for the cerebral lesions. Immediately after the attack in cerebral haemorrhage the control of the raised blood pressure is desirable. Hexamethonium bromide (vagolysen) is used for this purpose

subcutaneously. An initial dose of 10 mg. is given and the dose is increased every 2 hours until an effective dose is reached, this dose is repeated whenever the systolic blood pressure rises above 180 mm. Hg. Venesection is seldom effective. The increased intracranial pressure which often accompanies a cerebral haemorrhage can be treated by the administration of 8 ounces (240 ml.) of 25 per cent solution of magnesium sulphate by rectum or by removal of cerebrospinal fluid by lumbar puncture, which may be repeated at intervals of 12 to 24 hours if large amounts of bloody fluid can be removed. The question of operative removal of the clot should be considered in patients who have survived the initial shock of the haemorrhage and who continue to show evidence of increased intracranial pressure by lumbar puncture or by choked discs.

In cerebral thrombosis oxygen therapy has been recommended but it is doubtful whether the extent of permanent damage can be reduced by improving the oxygenation of tissue in the periphery of the infarcted area. Vasodilators have been administered to improve the cerebral circulation in patients with cerebral thrombosis but they have been found to be ineffective. The accompanying cerebral oedema may be treated with intravenous injection of hypertonic glucose solution, 25 to 50 per cent, in doses of 50 ml. It relieves the increased intracranial pressure but its effect is usually short-lived. Cortisone therapy may cause marked symptomatic improvement by inhibiting the oedema and mesenchymal reaction around the infarct which is believed to be responsible for much of the disturbance. An initial daily dose of 200 to 400 mg. cortisone or 40 to 80 mg. prednisone or prednisolone is given for the first two days. A maintenance dose of 100 mg. cortisone or 20 mg. prednisone or prednisolone a day is suggested. When the symptoms improve, the dose is gradually reduced. The blood pressure of the patient receiving cortisone therapy is to be watched as it may be raised. Anticoagulant therapy is administered only for the prevention of additional vascular lesions ; it cannot be expected to produce an improvement in the focal neurological signs already developed. Anticoagulants should be given to patients in whom the diagnosis of cerebral thrombosis can be established with reasonable certainty. Phenindione (dindevan) 100 mg. twice daily on the first day, 50 mg. twice daily on the second day, followed by 50 mg. on successive days is administered to maintain a prothrombin time of approximately 35 seconds. The anticoagulant therapy should be continued for 6 to 12 months. The appearance of haematuria and signs of bleeding anywhere in the body is an indication for immediate cessation of anticoagulant therapy.

In cerebral embolism anticoagulant therapy should be instituted as soon as the diagnosis can be established provided that the presence of a grossly haemorrhagic infarct can be excluded. Anticoagulants should not be given if the cerebrospinal fluid is xanthochromic or contains red blood cells. The length of time anticoagulant therapy is maintained depends largely upon the origin of the embolus. When atrial fibrillation is the source, anticoagulants may be discontinued within a month after the normal rhythm has been restored. In patients with myocardial infarction and with recurrent embolic phenomena associated with cardiac valvular disease, the therapy should be continued indefinitely. Anticoagulant therapy is contraindicated in patients with cerebral embolism due to bacterial endocarditis.

Convulsions are treated with dilantin sodium intravenously, intramuscularly, by stomach tube or orally in doses of 1½ gr. (100 mg.) every 4 to 6 hours. Restlessness and delirium require some sedative. The best sedative in these cases is paraldehyde 1 to 4 drams (4 to 15 ml.) by stomach tube or by rectum dissolved in 1 to 2 ounces (30 to 60 ml.) of oil. In no circumstance should the patient be given morphine. If the patient is conscious and complains of headache, this can be treated using aspirin or an icebag to the head.

The patient remains at bed rest for two to six weeks.

After the patient has recovered from the 'shock' of the cerebral vascular accident, therapy should be directed toward restoration of function in the paralysed limbs early in thrombosis and embolism and later in haemorrhage. The treatment of aphasia is difficult.

CASE NOTES

TUBEROUS SCLEROSIS (BOURNEVILLE'S DISEASE)

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Tuberous sclerosis is a rare heredofamilial disease characterised usually by the triad of symptoms—epilepsy, mental retardation and multiple small cutaneous tumours on the face known as adenoma sebaceum.

The first reference of this disorder was made by von Recklinghausen (1862), who described a case under the title of hyperplastic tumours of the brain with myoma

of the heart. The credit of classical description of the disease goes to Bourneville (1880). He described an epileptic child with mental defect, who died of the disease in a mental hospital at Paris. There was also adenoma sebaceum which he regarded as a coincidence. By 1900, Bourneville recorded 9 other cases.

The word tuber literally means a short thick part of an underground stem covered with modified buds, e.g., potato.

In tuberous sclerosis, the potato-like tumours or tumour-like malformation, usually hamartomas, have been described in brain, skin (Balzar and Menetrier, 1885; Pringle, 1890), retina (Van der Hoeve, 1920 and 1923), heart, kidney, thyroid, breast, duodenum (Brain, 1955), lung (Dawson, 1954), spinal cord (Lucas and Davis, 1955), islet cells of pancreas (Gutman and Leffkowitz, 1950). Other organs like large gut, adrenals and bones may be affected. The skin lesion although known as adenoma sebaceum shows hyperplasia of sebaceous gland and not adenoma proper; sweat glands, blood vessels, and hair follicles may also show varying degree of hyperplasia. Adenoma sebaceum can occur *de novo* without other features of tuberous sclerosis.

Little is known about its aetiology. It is possibly a congenital dysplasia rather than a true tumour. The wide distribution in different parts of the body, non-progressive character, association of other congenital anomaly and familial occurrence in some, are all in favour of congenital dysplasia. The areas of sclerosis in rare cases may undergo metaplasia into true neoplasm. Penrose (1938) suggests that it is due to a single dominant gene which is subject to modification by autosomal genetic factors.

Indian medical literature shows a paucity of reports of cases of tuberous sclerosis. Chakravarty (1951), Chakravarty, Banerjee and Ghosh (1953) reported adenoma sebaceum in a boy aged 16 and in a girl aged 13 respectively. Roy (1954) reported one case of tuberous sclerosis and Ganguli *et al* (1955) reported another in Indians.

Case Report

S., a Bengali Hindu male child aged 7, was admitted into the Hospital for Tropical Diseases, Calcutta, on 4-4-60 with complaint of fits for the last 1½ years. His mother noted pimples on his face since the age of 4. The patient was the sixth child of 8 children born to his parents. Parents were healthy. His brothers, sisters, family members on maternal and paternal side had no history of epilepsy. The patient was born at full term following a normal delivery. He was apparently a normal infant, teething was normal and he walked at the age of 1 year ; but talked a bit late, by the age of 3 years.

Clinical examination showed that the child was of average build and height. On his face were seen dark brown discrete papules, from pinpoint to split pea in size, symmetrically over the nose and cheeks (butterfly area), chin, a few on the forehead. These were typical of adenoma sebaceum (Fig. 1, *vide* Plate).

There were scars on the forehead, around the knees and on the tibia due to injury during fainting attacks.

Neurological examination showed that the child was mentally retarded and his mother said that the child was very backward at school. He was also a bit delinquent. He often used obscene language, stole food whenever a chance occurred, he fought with other children and was not afraid of being punished, and it was difficult to control him. His facial expression and the speech were normal. The cranial nerves, muscle power, tone, co-ordination were normal ; the jerks were normal and the plantar response flexor. Sensation was normal.

During his stay in the hospital, he usually had fainting spells 3 to 6 times in a day. During the fits he suddenly became rigid, lost consciousness, and then recovered in 2 to 3 minutes. There were no violent movements usually, but at times there was a very short-lasting clonic phase after the tonic phase of the fit. No automatic evacuation of the bowels or urinary bladder was seen after the fits.

Ophthalmological examination showed phacomas in the right eye. There was a big glistening white elliptical plaque, double the size of the disc, above the nerve head, with a smooth protuberant surface. The retinal vessels were covered by the plaque. Four other small greyish white plaques were also seen at the periphery of the retina.

Examination of cardiovascular, respiratory and gastrointestinal systems did not show any abnormality.

Laboratory studies on admission showed : Hb. 11·6 g., R.B.C. 3·7 million/c.mm., P.C.V. 37, M.C.V. 100 cμ, M.C.H. 31 $\mu\mu$g., M.C.H.C. 31 per cent, total W.B.C. 12,400/c.mm. with neutrophils 63 per cent, lymphocytes 18 per cent, monocytes 3 per cent and eosinophils 16 per cent, E.S.R. 14 mm./hour. Bone marrow examination showed no abnormality.

Blood sugar estimation, done just after one fit, during early hours of morning before breakfast, showed it to be 85 mg./100 ml. Blood urea was 25 mg. per cent and N.P.N. 35 mg. per cent.

Wassermann reaction of blood : negative.

Stool showed hookworm ova.

Urine showed no abnormalilty.

17 ketosteroid excretion : 3 mg./24 hours.

Liver function test showed normal function. Serum bilirubin 0·25 mg. per cent, conjugated serum bilirubin 0·05 mg. per cent, zinc sulphate turbidity test 3·6 units. Thymol turbidity 2·8 units. Total protein 7·4 g. per cent, albumin 4·4 g. per cent, globulin 3 g. per cent.

Pancreatic function : Fat absorption was 89 per cent ; total fat excretion per day was 7 g.

Electrocardiogram was normal.

Electroencephalogram : The record was definitely abnormal and paroxysmal and diagnostic of convulsive disorder. No evidence of localised lesion.

Cerebrospinal fluid clear, transparent ; pressure was normal. Cell count 0 cells per c.mm., sugar 85 mg. per cent, chloride 707 mg. per cent, protein 40 mg./100 c.c., W.R.—negative.

Radiographic studies : Chest x-ray normal, skull showed multiple areas of calcification in the brain (Fig. 2, *vide* Plate), excretion pyelography was normal. Barium meal examination was normal. X-ray of hand was normal.

Biopsy of papules from skin of the face : There were numerous hair follicles some of which were immature. Hyperplastic sebaceous glands and a large number of sweat glands were seen at places. Blood vessels were not in excess (Fig. 3, *vide* Plate).

The picture was quite in conformity with a histological diagnosis of adenoma sebaceum (Lever, 1949).

During 5 weeks' stay in the hospital, the patient was treated with tetrachlorethylene for hookworm infection. He was put on ferrous sulphate tablets gr. 3, twice daily after food, during the last two weeks. With diet and later iron therapy following eradication of hookworm infection, his anaemia improved and before discharge the haemoglobin was 15·3 g. per 100 c.c.

His fits could not be fully controlled with phenobarbitone and sodium diphenyl hydantoinate singly or in combination. Relief was, however, obtained with mesantoin and phenobarbitone.

Discussion

Clinical diagnosis of tuberous sclerosis can be made if two or more of the following features can be demonstrated : mental retardation, epilepsy, adenoma sebaceum, phacoma of the retina, multiple mixed tumours of the kidney, a family history of the disease (Molten, 1942). The diagnosis of the case reported above was based on the presence of grand mal epilepsy, mental retardation, calcification in brain, phacoma in retina and adenoma sebaceum. There was, however, no family history in this case.

Although neurological features are predominant in most cases, in atypical cases the brain may be normal, despite well-marked expression of the disease in other organs such as heart, kidney or skin. The presence of the disease may first be suspected by the dermatologist or the urological surgeon (Molten, 1942).

Recently Gutman and Leffkowitz (1959) reported a case of tuberous sclerosis where grand mal seizures were not of cerebral origin but due to hypoglycaemic episodes from islet cell tumour of pancreas. The present case did not show any hypoglycaemia.

Dawson (1954) held the opinion that the incidence was about 1 in 150,000 of general population and the incidence of tuberous sclerosis with mental defect was of the order 1 in 300,000 of general population. Due to high incidence of epilepsy and mental defect Smith *et al* (1955) were of the opinion that 0·01 per cent of admissions to institutions for the epileptic and feeble-minded in America was due to this disease, while Europe showed an incidence of 0·6 per cent. Actual incidence of the disease in the general population or in the inmates of hospitals for mental defectives in India is not known.

Brain *et al* (1951) was of the opinion that the disease was not found in coloured races. This opinion is disapproved by the cases reported in Indians by several authors (*vide supra*), besides the present case.

Summary

A typical case of tuberous sclerosis is reported in a Bengali Hindu male child aged 7 years.

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MARFAN'S SYNDROME

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Marfan's syndrome is a rare congenital condition characterised by long hands and feet (arachnodactyly) and general muscular weakness. Hereditary influence occasionally plays a part in its incidence and it is familial in some cases. It is more likely that it is genetically a dominant type of trait.

The cause of the disease is unknown. An endocrine error, particularly a fault of the pituitary, seems to be unlikely because while there is an overgrowth in the length of the bones they are disproportionately slender. A mesodermal aberration is suspected by some authors.

A typical case is of above average height for his age, of slender build, with poorly developed muscles and very little subcutaneous fat. The head may be long (dolichocephalic). Mentally the case falls in the average group. The chest is poorly developed, being funnel-shaped or flat with deformity of the sternum; and kyphosis with or without scoliosis, as a result of the muscular weakness, is common. There may be high-arched palate with deformities of the teeth.

The limbs are disproportionately long, the excess being more marked from the shoulder and hip downwards—the forearms are more affected than the upper arms, while hands and feet show the greatest amount of lengthening. The excessive length of the fingers, 'spider fingers', and the striking total length of the feet are diagnostic.

Hypermobility is common in the wrists, ankles and digits and may also be seen in hips, knees and elbows. Laxity of joints appears to be quite common. Excessive mobility of the thumb is a feature in some cases. Big toes may be unduly long and large.

A special feature is the general hypotonia of the muscles. The weakness in the muscles is not progressive. The weight of the body is comparatively low. Cardiac anomalies, specially hypoplasia of the aorta and atrial septal defects are associated in 40 to 45 per cent of cases.

Eyes are abnormal in about 80 per cent of the cases and in about half of these there is congenital dislocation of the lens. It is said that the errors in development of the eyes in such cases must have started as early as the third or fourth month of foetal life. Tremulous irides and small myotonic pupils that do not react normally, if at all, to atropine have frequently been reported. Other abnormalities like pupillary membrane remnants, coloboma and opacity of the lens, high myopia, megalocornea and deep anterior chamber have been recorded. Strabismus occurs in some cases. The dilator muscle of the iris may be ill-developed.

Sorsby (1951) reported poor development of fat in 75 per cent, congenital dislocation of the lens in 60 per cent, spinal anomalies in 58 per cent, congenital heart disease in 33 per cent, malformations of the ear in 25 per cent and poor musculature in 20 per cent.

A case of Marfan's syndrome with bilateral subluxation of lens is reported.

Case Report

M., aged 15½, was admitted complaining of defective vision specially marked since the last 2 to 3 years and headache while reading since the last 6 months. His general health had been poor. There was marked prominence of the sternum since birth but this deformity was specially noticeable for the last one year. He did not give any history of cough. There was no family history of skeletal deformity in any of his parents.

The patient was a young boy, very tall for his age (5 feet 7¾ inches) and grossly underweight (only 86 lb.). He looked lean and thin with poor development of subcutaneous fat and poor musculature all over the body.

Skeletal system—Excessive height suggested enlargement of the long bones which were, of course, slender (Fig. 1, *vide* Plate). The bones of the extremities, particularly of the feet and hands, were quite long (Figs. 2 and 3, *vide* Plate). Specially noticeable was the increased length of the phalanges of the toes and fingers.

There was marked prominence of the sternum and the costochondral joints with some lengthening of the anteroposterior diameter of the chest ('pigeon' chest) (Fig. 1, *vide* Plate). The scapulae were large and reached the level of 10th dorsal vertebra (normally they remain within the level of the 7th or 8th dorsal vertebra).

There was some laxity of the joints, particularly the knee joint, where hyperextension upto quite a marked degree was possible. The patient had suppurating otitis media with discharge from the right ear. Examination of the chest revealed signs of emphysema with harsh breathing (juvenile emphysema). There was no localising crepitus or rhonchus. Fig. 4 (*vide* Plate) shows emphysema.

Cardiovascular system was normal. Electrocardiogram did not reveal any abnormality. Other systems were normal. The routine blood examinations were negative. The serum calcium was 13·4 mg. and serum phosphorus 3·2 mg. per cent.

Eye changes—The lens was dislocated in both the eyes and in each case it was displaced towards the right and slightly upwards. The phakic and the aphakic part of the pupil could be seen clearly in both the eyes. The pupil of the right

eye did not dilate with homatropine solution but could be partially dilated with atropine ointment applied for well over 3 days. The patient had an alternating divergent strabismus of about 10° but usually he preferred to fix with the right eye.

Fundus examination did not reveal any abnormality. Vision improved in the the right eye with −9·0 d. sph. lens to 6/24 and the left eye with −5·0 d. sph. and −2·0 d. cyl. axis 60° to 6/36.

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BUCCAL STREPTOKINASE-STREPTODORNASE IN POST-OPERATIVE AND POST-TRAUMATIC CONDITIONS

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Enzyme therapy according to Moser (1957) has opened a new therapeutic approach to problems of thromboembolism and inflammation. Streptokinase-streptodornase is a combination of enzymes produced by a special strain of streptococcus. Streptokinase indirectly acts by activating the normal fibrinolytic mechanism in serum (Innerfield, 1956 and 1957; Innerfield *et al*, 1958) without damaging normal tissues. Streptodornase assists in liquefying the viscous mucin of dead cells and pus, and acts as a debriding agent (Sherry *et al*, 1948).

Fibrinolysis caused by parenteral streptokinase-streptodornase may be helpful clinically in cases of haemafoma, traumatic and inflammatory oedema (Kramer and de Maderiros, 1957). Injection of the drug is locally painful. So buccal use is a great advantage, if it is found equally effective.

The use of streptokinase and streptodornase helps in post-operative and post-traumatic conditions by preventing oedema and haematoma that are ordinarily encountered (Miller *et al*, 1958). This is all the more important in deep extensive wounds where postoperative tension is likely to interfere with the normal healing process.

Three cases where streptokinase and streptodornase were used with satisfactory results are reported.

CASE REPORTS

Case 1—A 36 year old doctor sustained comminuted fracture of the head of the radius, with gross swelling of the right forearm. Total excision of the head of the radius was done after 3 days when all the tissue planes around the elbow were full of blood clots. With buccal varidase, Lederle (Streptokinase-streptodornase tablet, 10,000 units), used postoperatively, 4 times a day for 6 days, the swelling of the elbow and forearm subsided promptly. [The tablets were kept in the mouth for slow absorption, and were not swallowed]. Stitches were removed on the 7th day with good union.

Case 2—A 40 year old farmer sustained brachial plexus avulsion by being chopped with a *dao* by dacoits. The wound was surgically explored and necessitated extensive tissue plane dissection in the neck and supraclavicular region. To prevent resultant haematoma and oedema which might press upon the sutured brachial plexus, buccal varidase tablets in usual dosage was used for 6 days. There was practically no oedema and swelling during the post-operative period, and the extensive wound healed normally. Stitches were removed on the 8th day with primary union.

Case 3—A 56 year old heavily built female sustained a fall which caused a huge haematoma in her right thigh, with discolouration of skin. X-ray showed no fracture of the femur. With varidase, 1 tablet 4 times a day for 3 days, the swelling of the thigh quickly subsided and the patient made an uneventful recovery.

COMMENTS

Apart from its use in thrombo-embolic condition and inflammatory swelling, enzyme therapy is useful in reducing oedema and haematoma and helping in the repair of surgical wounds. It is therefore expected to have a promising future in the management of postoperative and post-traumatic conditions. As the fibrinolytic process is activated, there may be a chance of dissemination of bacteria to various parts of the body. Concurrent use of antibacterial drugs and antibiotics is therefore indicated in infective and potentially infected conditions.

ACKNOWLEDGMENTS

I am thankful to Dr. S. C. Bose, Principal and Superintendent, Medical College, Calcutta, for permission to use the hospital records, to Professor K. C. Sarbadhikari for co-operation in the work and to Lederle Laboratories (India) Pr. Ltd., Bulsar, for the supply of Varidase for clinical use.

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CALCUTTA, SEPTEMBER 1, 1960

SOME COMMON PROCTOLOGICAL CONDITIONS

Haemorrhoids have been called a 'normal abnormality' since there are millions of people who have them and who are nonetheless quite comfortable and symptomless. There is hardly a known pathological condition easier to diagnose than haemorrhoids. But the distinction between haemorrhoids *per se* and those which are causing symptoms is not so easy. Haemorrhoidectomies have, not unoften, been wrongly performed without success for the relief of symptoms caused by so diverse conditions as ulcerative colitis, proctitis, backache, carcinoma of the rectum, carcinophobia, proctalgia fugax, the levator syndrome, carcinoma of the caecum and anal pruritus[1].

Internal haemorrhoidal tissue occurs in almost everyone over the age of 30 or 35. The question now arises as to who should be operated upon or otherwise treated? Any patient who regularly bleeds from piles and any patient whose piles prolapse on movement of the bowel or on lifting or straining deserves treatment. But mere presence of piles is not sufficient indication for operation. The symptoms, if any, of haemorrhoids are almost always purely local. When operation is decided upon, every vestige of haemorrhoidal tissue must be removed. If bleeding recurs after an operation for piles, it is the surgeon who should be indicted for his sorry performance. Most persons will be completely and permanently relieved of their symptoms by the removal of the three main haemorhoidal groups. For, if it takes a person 30 years to develop piles, it is likely that with 90 per cent of affected tissue removed, it will take him at least an equal time to develop haemorrhoids which will again give him symptoms. If patients are selected with reasonable judgment the result will be satisfactory. Injection treatment is effective in a large group of cases.

[1] HULLSIEK, H.—*Minnesota Med.*, **43** : 310, 1960.

The symptoms of anal fissure are so characteristic that a physician can often make a diagnosis without examination. Recently formed fissure without 'sentinel pile', without any hypertrophied anal papilla, and with little or no anal fibrosis, will almost certainly get well without surgery. But deep chronic fissure with a 'sentinel tag,' anal fibrosis and anal papilla will never heal without operation. In conditions between the above two grades, conservative treatment for 2 or 3 weeks should be tried before advising surgery. Applications of silver nitrate, anaesthetic ointment or suppositories do no good whatsoever.

A peri-anal abscess gives a history of constantly increasing pain unrelated to bowel movement. The importance of immediate diagnosis lies in the fact that if an abscess is present it should be drained the same day ; while if none is present, the delay in diagnosis will do no harm. White cell counts (between 12,000 and 20,000/c.mm.) will clinch the diagnosis. If the count is normal no abscess is present. A peri-anal or peri-rectal abscess which has been diagnosed should be opened the very day. There is no excuse in waiting for such an abscess to 'point'.

The so-called rectal or colonic polyp is generally assumed to be a pre-malignant lesion, as it often is. But there is no proof that all polyps become malignant. Certainly, the lymphoid follicle in the submucosa, or a papillary excrescence with a normal mucosal covering is possibly polypoid in shape, but is not pre-malignant.

The pilonidal cyst or sinus is located in a more or less deep groove between the nates and its complete eradication is easily accomplished. But the less extensive the operation, the more the likelihood of a satisfactory and permanent healing. For this reason, some surgeons lay open all tracts and remove almost no tissue.

Pruritus ani is not a disease, it is only a symptom, which is caused by too many different causes. The proctologist, the dermatologist and the physician must collaborate in its treatment.

Finally, the proctologists are advised to review their ideas and their practices regarding the common diseases of the anus and rectum for which considerable controversy exists.

I.M.A. PRESIDENT VISITS DELHI, VARANASI, CALCUTTA AND PATNA

At Delhi

Dr. H. N. Shivapuri, the President of I.M.A., paid a visit to the Delhi Medical Association on 4-6-60. Col. Amir Chand, President of the Delhi Medical Association (Ex-President, I.M.A.) introduced Dr. Shivapuri to the members.

Dr. Shivapuri addressed the members as follows:

Col. Amirchand and Friends,

I am grateful to you all for giving me this opportunity of meeting Delhi friends. I am extremely thankful to you, Sir, for the kind words used by you for me but I know what I am and my own disabilities, but in the words of Shakespeare I will only request you to

"Speak of me as I am; nothing extenuate,
Nor set down aught in malice: then must you speak
Of one that lov'd not wisely, but too well;"
—*Othello*

We are faced with many problems. One of our main problems today is quackery and the competition we have from ayurvedists, hakims, homoeopaths and quacks. The Government always talk of shortage of doctors, but they do not consider the problem they have created by registering and recognising several lakhs of these so-called practitioners. And once they are registered, they all use the modern medicines without knowing much about their pharmacology. It is an unfair competition set up by them that we have to meet and contend daily in our practice and we cannot sit quiet till this problem is solved. We are not against these various methods or lack of methods of treatment, but what we want is that they must not use strongly reacting and toxic modern drugs. These drugs should only be allowed to be used by persons duly qualified in accordance with the Indian Medical Degrees Act, 1916 and under conditions and regulations framed by the Medical Council of India.

The lack of these ordinary and commonsense precautions on the part of the Government is causing severe heartburning amongst us all and in addition is leading to underemployment and unemployment. The poor pay scale given by the Government to medical men adds to the trouble. The Government on the one hand complain of shortage of doctors and on that ground are opening more and more medical colleges. But the pay scales of the Government particularly for medical men are so poor that our young men refuse to accept them. This is adding to the existing problem of competition and underemployment.

This has led to another trouble of a different sort. Under these uneconomic conditions of employment and unfair competitions from registered quacks, we are also losing our bearings and becoming unethical. There is no code of ethics for ayurvedists, hakims, homoeopaths and other registered quacks, registered under different acts under various pretences. And these people are allowed to use all modern drugs without knowing much about them under the garb of being "Registered Medical Practitioners". It is high time that this much misused word was redefined by law, so as to exclude all misuse of modern drugs by people knowing very little about them. Naturally we find the competition very unfair, presenting a serious obstacle to the maintenance of our ethics. It is no wonder, therefore, that some of us yield to various temptations. But I appeal to my colleagues not to lose our moral and ethical standards, but to stick to them. The present unfair competition, I am sure, will not and cannot last permanently.

This brings me to our seclusion from public life and publicity. A medical man in India is by force of circumstances individualistic with the result that we have begun to shun publicity and hate limelight. But time has arrived that we, as the best educated group of people, should take our rightful place in public affairs and lead mass opinion in our favour. But this means that we have to contact the masses and leave our aloofness. Unless we try mass contact and lead public opinion, things are not likely to improve for us. Even papers give very little space or publicity to our activities and one paper went to the length of abusing us as a set of nincompoops. Even our All-India Conference or the Presidential Address finds very little publicity. I am of opinion that we should have a properly organised publicity centre in our office to keep regular contact with editors of various papers and other press correspondents and from time to time we should give publicity to our various activities. We should also have regular contact with the members of the Parliament and various Legislatures, so as to watch various laws when proposed and which may affect us, and publicise our views on them. This should be done before the law is actually passed and is still on the anvil. We often wake up when it has actually been passed and then it is too late.

One activity in which I would like you to take interest is Family Planning. Family Planning as a solution of our food problem is a stunt of the poli-

ticians. I do not believe in it. Food scarcity is an urgent problem requiring immediate attention Family Planning, on the other hand, is a long term business and will show some result after years of propaganda and planning. But I am pleading for its own sake—for health reasons, particularly of the mother and the baby and for economic reasons. In modern times no parent can afford to efficiently train, educate, clothe and otherwise bring up a large number of children, nor can the country go on supporting such large annual increase of population. The population has to be and must be stabilised at a reasonable figure and therefore family planning has come to stay. But it cannot be a success unless the medical profession takes interest in it. No set of armchair politicians can make it a success.

We often hear criticism of the Association when it fails to do something or other or fails to come up to your expectations. But pause and consider the reason why it is so? The reason is that we lack in strength. Out of about 75 or 80 thousand medical men of modern medicine, we have only about 25 per cent or a little over on our rolls and even they are not staunch in their faith in the Association, i.e., they will not follow the mandate if any were to be issued by the Indian Medical Association, if occasion demanded. The strength of the British Medical Association or the American Medical Association or other National Medical Associations lies in their practically universal membership and in the members' faith in their leadership and the disciplined way in which the members follow the advice of their leaders. Unless we can also pick up those characters and add to our strength, our weakness will continue. It is for you to add to the numbers and properly elect or select your leaders and then give them your disciplined faith and confidence. Unless that happens the Indian Medical Association will continue to be weak and it is for you to give it the desired stability and strength.

One example I will quote. It is almost two years when the Foundation Stone of the Building of the Indian Medical Association was laid in this capital town of Delhi by the President of India. A meeting of the Delhi Branch of the Association was also held and addressed by the then President. Members of Delhi Branch I remember talked of collecting at least 40 thousand rupees in a short time for the Building Fund. But to our shame I find that the Delhi Branch has so far contributed only Rs. 7,000/-. Now this is our faith in our Association! You have not kept your promises. I hope you will now compensate for this lapse on your part. I would like to see Delhi contributing at least Rs. 50,000/- before the end of this year. This will be an instance of our disciplined action and faith in the Association. In this connection I welcome a cheque of Rs. 101/- handed over to me just now from one of your members. I hope the remaining members will follow his example.

I would like to draw your attention to Rural Health and I want you to consider how we can help it. One way I can suggest and that is to adopt one or more villages near Delhi. Your members can look after the population and see both to the curative and the preventive side of their health. Rotary Club does it and our members as the members of the Club partake in these activities. Why can they not do the same as our members? Incidentally that will make the Association popular among the masses.

I would also like to place before you that the Association in publishing two health journals—*Your Health* in English and *Apka Swasthya* in Hindi. They are our journals and we ought to patronise them, but very few of our members subscribe to them. I would request you to subscribe to these two journals and make them popular among your patients.

The Third Five Year Plan is about to be published. I would request you all to study it carefully and send suggestions to the Central Office, so that Indian Medical Association can place its own constructive ideas before the Government and the public. As it is, the subject of Health has been given very low priority in the Government Plans, although the very success of all planning depends on the health of the workers. But unfortunately that realisation has not dawned yet on our planners. It is our duty to emphasise this through the Association.

Ladies and Gentlemen, I have taken some of your valuable time and I have tried to place some important matters before you for your consideration. I will end with the following lines from Swami Vivekananda:

The duties of life are sore indeed
And its pleasures, fleeting, vain,
The goal so shadowy seems and dim,
Yet plod on through the dark, brave heart,
With all thy might and main!

Friends, I thank you all once again.

Jai Hind.

At Varanasi

Dr. H. N. Shivapuri left Luncknow on the morning of 30th of June 1960 reaching Varanasi in the afternoon. He was there for 3 hours and

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attended a meeting of the Varanasi Branch which he addressed. He also discussed about the future running of *Apka Swasthya* with some of the members of the Editorial Board. He left for Calcutta late in the evening.

At Calcutta

Dr. Shivapuri reached Howrah on 1st of July 1960. The same day he met among other members of the Indian Medical Association, Dr. A. C. Ukil, Capt. P. B. Mukherji, Dr. A. D. Mukharji, Dr. B. P. Tribedi and Dr. A. K. Bose and discussed with them various matters of interest to the Association.

On July 2, 1960 he presided over a meeting of the Journal Committee held in the office of the Journal at 2-00 P.M. The meeting which lasted up to 5-30 P.M. discussed several important matters connected with the running of the Journal as also *Your Health* and *Apka Swasthya*. The meeting also discussed the future running of *Apka Swasthya* and for the discussion of this subject, the Editor of *Apka Swasthya*, Dr. B. S. Mehta, had been specially invited by Dr. Shivapuri from Varanasi in accordance with the instructions of the last Working Committee meeting held at Poona. Dr. P. K. Guha, Editor, J.I.M.A. has been asked by the President to formulate necessary changes and additions in the Rules and the Bye-laws of the Association for formal taking over and running of *Apka Swasthya* in accordance with the decisions reached at the meeting of the Journal Committee held on 2nd July, 1960. These were proposed to be included in the amendments of the Rules and Bye-laws of the Indian Medical Association at an early date.

At 6-00 P.M. Dr. Shivapuri attended a meeting of the Calcutta Branch of the Indian Medical Association. At this meeting he suggested that instead of a speech by him short discussion should be held on various questions and topics raised by the members. The following important points amongst others were discussed.

1. Refresher Course for Doctors.
2. Publicity—The general feeling was that greater publicity on behalf of the Indian Medical Association was required in the press and amongst the public.
3. There was also a general feeling that more space should be devoted in the Association Journal to publicise the activities of Branches and attempts should be made to see that these reports appear in the Journal earlier than they do at present.
4. Publicity of the E.S.I. Scheme. There was also a feeling that the reports of activities of our representatives on various Government bodies should be published in the Journal for the information of the members, so that members could know as to what our representatives do for the Indian Medical Association on the various bodies to which they are elected by the Association. For example, members would like to know the activity of Indian Medical Association representatives on E.S.I. Corporation and the Medical Benefit Council. It was suggested that if space cannot be found in the Journal for full reports, then at least a brief summary should be published in the Journal for the information of the members.

The President appealed to the members present to take active interest in the Building Fund of the Indian Medical Association which they promised to do.

At 8-30 P.M. the President of the Calcutta Branch, Major K. K. Ghosh, gave a dinner at the Firpo's Restaurant.

On 3rd July Dr. Shivapuri met Dr. H. K. Handoo about whom he writes, "Dr. Handoo as most of us know was practising in London, but due to his ill health he has now retired and is in Calcutta. He has always been interested in us. I had a very interesting and helpful talk with him on the activities of the Indian Medical Association, in which he is still very interested, though unfortunately due to his ill health he is unable to take an active part."

In the evening Dr. Shivapuri left for Patna.

At Patna

The President reached Patna on the 4th morning. The whole of the forenoon was spent in meeting some of the important members of the Patna Branch in an effort to raise more money from Patna for the Building Fund. The same day a lunch was given by Dr. P. N. Sinha in which the Minister of Health, Bihar, the Vice-Chancellor of the Patna University and some other prominent members were present and there was fruitful discussion on various health matters.

In the evening there was a meeting of the Patna Branch which had also arranged an 'at home' on the occasion. The President addressed the meeting in course of which he appealed to those present to collect more money for the Central Building Fund of the Indian Medical Association. The members promised to make greater efforts and the President from the enthusiasm shown by them hopes for much. A dinner was given by the President of the Patna Branch. Dr. Shivapuri left Patna the same night for Lucknow.

GENERAL PRACTICE DIGEST

TREATMENT AND PREVENTION OF RHEUMATIC CARDITIS

When one is reasonably certain of the diagnosis of rheumatic carditis, intensive and prolonged treatment is imperative in order to prevent or diminish cardiac damage.

1. *Rest: the essential treatment*—The essential condition of therapeutic success is absolute bed rest for 2 to 4 months, i.e. until complete disappearance of all signs of rheumatic activity. Later, gradual getting up is recommended, so that in 6 to 12 months, the child slowly resumes his activities.

2. *Anti-inflammatory treatment*—Rheumatic fever is an inflammation of the tissues and affects mainly the heart, joints, and subcutaneous tissues. For this purpose salicylates are recommended in dosage of one gramme per 10 lb. of body weight per day, divided into six doses. This maximum dose is given for 2 weeks, then decreasing doses are given for 4 to 6 weeks. Aspirin is preferably given as a long-acting salicylate. Complications of salicylate intoxication is manifested by tachycardia, over-breathing, vomiting etc.

There is now a tendency to replace treatment with salicylates by steroid medication. Hormone treatment (steroids) saves patients with severe forms of the disease. The steroid treatment moreover acts much faster than the salicylate treatment and the length of attack is shortened. If instituted early enough, this therapy appears to diminish or even inhibit cardiac sequalae, particularly during the first attack. In case of prednisone, doses of 60 mg. daily, divided into 6 doses are given for 3 weeks, then decreasing doses for 6 to 12 weeks. The treatment must be sufficiently prolonged. There is risk of rheumatic recurrence if the drug is stopped too soon or too abruptly. A few doses of adrenocorticotrophic hormone (ACTH) should be given at the end of steroid treatment to stimulate adrenal function.

To prevent the 'rebound' phenomenon, which can occur after cessation of corticotherapy, salicylates are given for 2 to 3 weeks in the form of aspirin after prednisone has been discontinued.

Cardiac insufficiency accompanying the severe forms of rheumatic carditis is treated in the usual way, i.e. with digitalis, diuretics and oxygen.

Sedatives are given routinely as well as a low sodium, and high potassium diet.

3. *Anti-infectious treatment*—As soon as the diagnosis of rheumatic fever is suspected, throat cultures are taken and the anti-streptolysin 'O' titre determined. The aim of treatment is the eradication of beta-haemolytic streptococci from the throat by antibiotics. Penicillin is the drug of choice. A dose of 400,000 units of procaine penicillin is injected intramuscularly daily for 10 days. Oral penicillin (benzathine penicillin-G) can be used in doses of 200,000 units, three times daily for 10 days. Subsequently these young patients follow the schedule of prevention of rheumatic recurrences.

Prophylaxis—This is of prime importance in rheumatic fever, which is believed to be due in some way to streptococcal infection. Measures should be undertaken to combat and prevent this infection.

All patients with a history indicative of rheumatic fever or with a rheumatic heart lesion should receive prophylactic penicillin to prevent rheumatic recurrences. The following well-defined schedule should be followed: (1) rapid treatment of respiratory infections (often of streptococcal origin) with sufficiently high doses of penicillin for 10 days; (2) continuous administration of a long-acting penicillin, prophylactically, in the form of an oral or intramuscular preparation, such as benzathine penicillin-G, which is the antibiotic of choice in the prevention of rheumatic recurrences.

Benzathine penicillin-G may be used orally or intramuscularly. One tablet (200,000 units) of oral penicillin may be given every morning. If this dose is considered insufficient, one tablet may be given twice daily, morning and evening. If the intramuscular route is preferred, 1,200,000 units are given intramuscularly once a month. An effective level of penicillin concentration remains in the patient's serum from 21 to 28 days. If this dose is found ineffective, the injection is repeated every three (instead of every four) weeks. If penicillin is not tolerated by the patient, sulfadiazine, 0·5 to 1 g. daily is recommended.

The prophylactic antibiotic treatment with penicillin must be continuous and maintained during the whole year without interruption and then for an indeterminate period. If respiratory infection develops, the dose of penicillin should be increased to 200,000 units, three times daily for at least 10 days. The patients should be followed up regularly with sedimentation rate determination. If the latter is found elevated, the C-reactive protein value and the anti-streptolysin type should be determined. A throat culture is also necessary.

From an article by G. Gilbert, N. Aerichide and M. Lefebvre—*Canad. M. A. J.*, **23**: 179, 1960.

CURRENT MEDICAL LITERATURE

Corticosteroid-induced Peptic Ulcer

DUBOIS, R. L., BULGRIN, J. G. AND JACOBSON, G. (*Am. J. Gastroenterol.*, **33**: 435, 1960) from the Departments of Internal Medicine (ELD) and Radiology (JGB and GJ), University of Southern California School of Medicine, and the Los Angeles County Hospital, from a serial roentgenological survey of patients receiving high dosages of corticosteroids observe:

Fifty-seven patients, most of whom had systemic lupus erythematosus requiring large doses of corticosteroids, had serial upper gastrointestinal x-rays performed at intervals of three months. An additional 20 patients had one examination. The incidence of peptic ulcer in 41 of these who were treated with salicylates and antimalarials was five per cent. Seventeen patients, or 27 per cent of the steroid-treated group, developed peptic ulcers. Five of the 12 treated males in the series, or 41 per cent, showed these changes, and 24 per cent of the female patients.

In 16 cases where definite ulcer craters were found, 10 were gastric in location and six duodenal. The occurrence of ulceration was directly proportional to the dosage of corticosteroid employed. There was no statistically significant difference in incidence of ulceration between prednisone, prednisolone, methylprednisolone, triamcinolone or dexamethasone. Converting the dosage of steroids utilised to prednisone equivalents, the incidence ranges from the occurrence of no peptic ulcers below 10 mg. per day, 4 to 23 per cent from 10 to 59 mg. per day, and 47 per cent when the dosage was over 60 mg. per day for two months or more. Four patients who developed ulcers had been on a prophylactic ulcer regimen. One of them had a deformed duodenal bulb and ulcer symptoms at the start of therapy and the other three received the highest doses of the steroids, namely 100 mg. per day of prednisone, 96 mg. per day of triamcinolone and 144 mg. per day of methylprednisolone.

Ulcer symptoms were present in 12 of the 17 patients with lesions. Two others were psychotic. Two additional patients had their ulcer craters appear and fully heal without symptoms, change in steroid therapy or ulcer regimen. One ulcer healed with only reduction in steroid dosage.

A total of 28 patients, of 63 given corticosteroids, had ulcer symptoms while taking the newer hormone, and 12 of the symptomatic cases developed proven peptic ulcers. Consequently complaints of dyspepsia during steroid therapy should be given serious consideration and a full ulcer regimen begun.

During the period in which the patient receives steroid therapy, the chances of developing peptic ulcer are 100 to 130 times greater than for the nonsteroid-treated patient. The only preventive method is the use of prophylactic ulcer regimens with antacids and anticholinergic therapy in patients receiving 10 mg. per day of prednisteroids, or its equivalent. All patients with an ulcer history or those who develop dyspepsia on steroids should be placed on a regular ulcer schedule regardless of steroid or dose employed.

Diagnosis and Results of Treatment of Gastric Polyps

Huppler, R. G., Priestley, J. T., Morlock, C. G. and Gage, R. P. (*Surg. Gynec. & Obst.*, **110** : 309, 1960) from the sections of Surgery, Medicine, and Biometry and Medical Statistics, Mayo Clinic, and the Mayo Foundation, Rochester, Minnesota, write :

The records of 465 patients in whom the clinical diagnosis of gastric polyp was made at the Mayo Clinic have been reviewed. Operations were performed on 300 of these patients. The surgical pathologic findings revealed that 60 per cent of the 300 patients had benign gastric polyps, 20 per cent had other types of benign lesions, and 20 per cent had malignant lesions. This last group included, among others, 25 patients in whom malignant changes were found in the tip of a gastric polyp. Roentgenologic examination is the most accurate diagnostic procedure, but it is less accurate in gastric polyps than in most gastric lesions.

A follow-up study of 5 years or more after operation was made on all patients. A total of 92 per cent of the patients who had benign gastric polyps removed were alive 5 or more years later. This is equivalent to the survival rate of the 'normal' population of the same age and sex distribution. The survival rate was 78 per cent for those who had polyps removed which showed malignant changes in the tip.

Appendicitis in Old Age

Hurrell, D. S., Barton. W. K. and Solomon, O. D. (*Surg. Gynec. & Obst.*, **110** : 289, 1960) from the Department of Surgery, Mound Park Hospital, St. Petersburg, Florida from an analysis of 100 cases of proved appendicitis in patients aged 50 years and above observe :

When compared to a control group of patients aged 30 to 39 years, the chief differences were found to be in : (a) symptoms of chills and fever, (b) the rise in leucocyte count, (c) interval of time prior to appendectomy, (d) severity of the disease, (e) the number requiring surgical drainage, (f) mortality, and (g) complications.

Failure of antibiotics to control the disease during observation is cited.

The older patients showed a very high incidence of perforation and of gangrene.

Appendicitis in older people is usually not dissimilar to that in younger individuals, yet there are significant differences which the physician must know.

Certain economic factors and the dearth of insurance coverage are shown.

The factor of age alone should be no deterrent to making the diagnosis of appendicitis nor to proceeding immediately with appendectomy.

Transaminase Activity During Pregnancy and the Puerperium

Rimbach, R. and Bonow, A. (*German M. Monthly*, **5** : 85, 1960) from the Women's Hospital, University of Gena, give in the following lines the summary of their observations on the changes in transaminase activity during pregnancy and the puerperium :

The serum levels of glutamic-oxalacetic transaminase (SGOT) and of glutamic-pyruvic-transaminase (SGPT) were found to be the same in pregnant women and those in labour or the puerperium, as determined in 25 women during normal pregnancies. 25 non-pregnant healthy women served as a control group. Enzyme activity was generally normal during pregnancy. Increased values were found in 1 case of hepatitis and 2 of placenta praevia. At the end of delivery, the activity was on the average double the normal mean value. In some cases there was a marked increase. Neither birth injury nor uterine involution had any influence. Only minor changes were observed after section. Enzyme levels had returned to normal values 4-10 days after delivery. The increased values found in placenta praevia and during delivery are probably due to the liberation of placental enzymes.

Bacterial Flora in Vaginitis

BUTLER, B. C. AND BEAKLEY, J. W. (*Am. J. Obst. & Gynec.*, **79**: 422, 1960) from St. Luke's Hospital, from a study before and after treatment with pure cutting of Doderlein bacillus observe:

The Doderlein bacillus is usually present in the normal vagina and absent when there is vaginitis.

Pure cultures of certain strains of Doderlein bacillus isolated from the vagina of normal women can be cultured and successfully reimplanted in the vagina of patients lacking the bacillus.

Lyophilised Doderlein bacillus gave results comparable to the skim-milk preparation used at first and had the advantages of indefinite preservation, uniformity of bacterial count, and simplicity of use.

The study comprised 165 private patients with vaginitis seen in one year, 1958.

In Plan A, 134 patients were intensively studied over a period of 6 months. The presence or absence of Doderlein bacillus was determined by a cultural method designed to favour its growth. Patients with vaginitis, lacking the Doderlein bacillus, were treated by applying pure cultures of a special strain of Doderlein bacillus to the vagina. On a subsequent visit a repeat culture was taken to determine the effectiveness of the therapy.

Of 44 cases of monilia vaginitis, 25 were treated and studied intensively. With repeated applications, signs and symptoms cleared rapidly and the vaginal flora became predominantly Doderlein bacillus. Mycostatin vaginal suppositories were used in addition only during the first week.

There were 47 cases of non-specific vaginitis. Before treatment 81 per cent of these patients had no Doderlein bacilli in the vaginal flora. They were treated with only pure cultures of Doderlein bacillus. Of the 19 cases intensively studied 95 per cent were cured and the vaginal flora of these patients became predominantly Doderlein bacillus.

None of the 17 patients with trichomonas vaginitis had Doderlein bacillus in the vaginal flora. These patients were initially treated with pentavalent arsenical as well as with Doderlein bacillus cultures. As the arsenical was stopped and the trichomonads disappeared, further applications of Doderlein bacillus resulted in a nearly predominant growth of this microorganism.

The 65 patients in Plan B, some of which were continued from Plan A, gave evidence that similar results could be expected from the use of the lyophilised preparation.

Since there is widespread use of systemic and local drugs which destroy the normal vaginal Doderlein bacillus, the proper biological balance should be maintained or restored. This may be accomplished by vaginal applications of pure cultures of a special strain of Doderlein bacillus as reported in this study.

Electrolyte in Human Myometrium

DANIEL, E. E., HUNT, J., ALLAN, DAVID AND ROBINSON, K. (*Am. J. Obst. & Gynec.*, **79**: 417, 1960) from the Departments of Pharmacology and Anaesthesiology, University of British Columbia give in the following lines the summary of their observations:

Analyses were carried out of the water, chloride, sodium, and potassium concentration of biopsy specimens of human myometrium. Comparisons were made between the values found in various stages of the menstrual cycle, in menopause, in pregnancy, and in other various pathological states. Comparisons were also made of the values found in the various portions of the corpus (the upper, mid, and lower uterine segments).

In menopause, the myometrium was found to contain a low water concentration relative to other states and to have higher concentrations of those electrolytes (Na and Cl) which are present in high concentrations in the extracellular fluid. Correspondingly, it had lower concentrations of potassium, a component concentrated in cellular fluid.

In the proliferative and secretory stages of the menstrual cycle there was a higher concentration of water and of potassium in the myometrium than in menopause. The concentrations of sodium and of chloride tended to be lower; the water concentrations of the myometrium was highest in the mid and late proliferative phases. Potassium concentration was highest in the late secretory phase. Concentrations of sodium and chloride did not vary significantly during the cycle, but sodium concentration tended to be lower in the mid and late proliferative than in the secretory states.

In pregnancy, at term but before the onset of labour, the potassium and water concentrations of the myometrium are as high as or higher than in any stage of the menstrual cycle. The water concentration of the lower uterine segment is remarkably elevated compared to the nonpregnant state, and this change is accompanied by an increase in concentrations of sodium and of chloride.

The lower uterine segment was found to contain less water and sometimes less potassium than the upper and midsegments in all conditions studied except in pregnancy at term.

Various pathological myometria have been analysed and the results discussed as illustrative of a possible insight to be gained by such analyses into mechanisms operating in uterine pathology.

Finally, the implications of these results with regard to current hypotheses as to the mechanisms of action of ovarian hormones and as to the difference in mechanical activity of various uterine segments have been discussed.

Psychiatric Disorders After Pelvic Operations

HOLLENDER, M. H. (*Am. J. Obst. & Gynec.*, **79**: 478, 1960) from the Department of Psychiatry, State University of New York Upstate Medical Centre, and the Syracuse Psychiatric Hospital writes:

Of 203 women admitted to the Syracuse Psychiatric Hospital in 1958, there were 9 in whom a pelvic operation was seemingly a precipitating factor for the psychiatric disorder. This was in sharp contrast to the number of women admitted following operations of all other kinds (5 patients).

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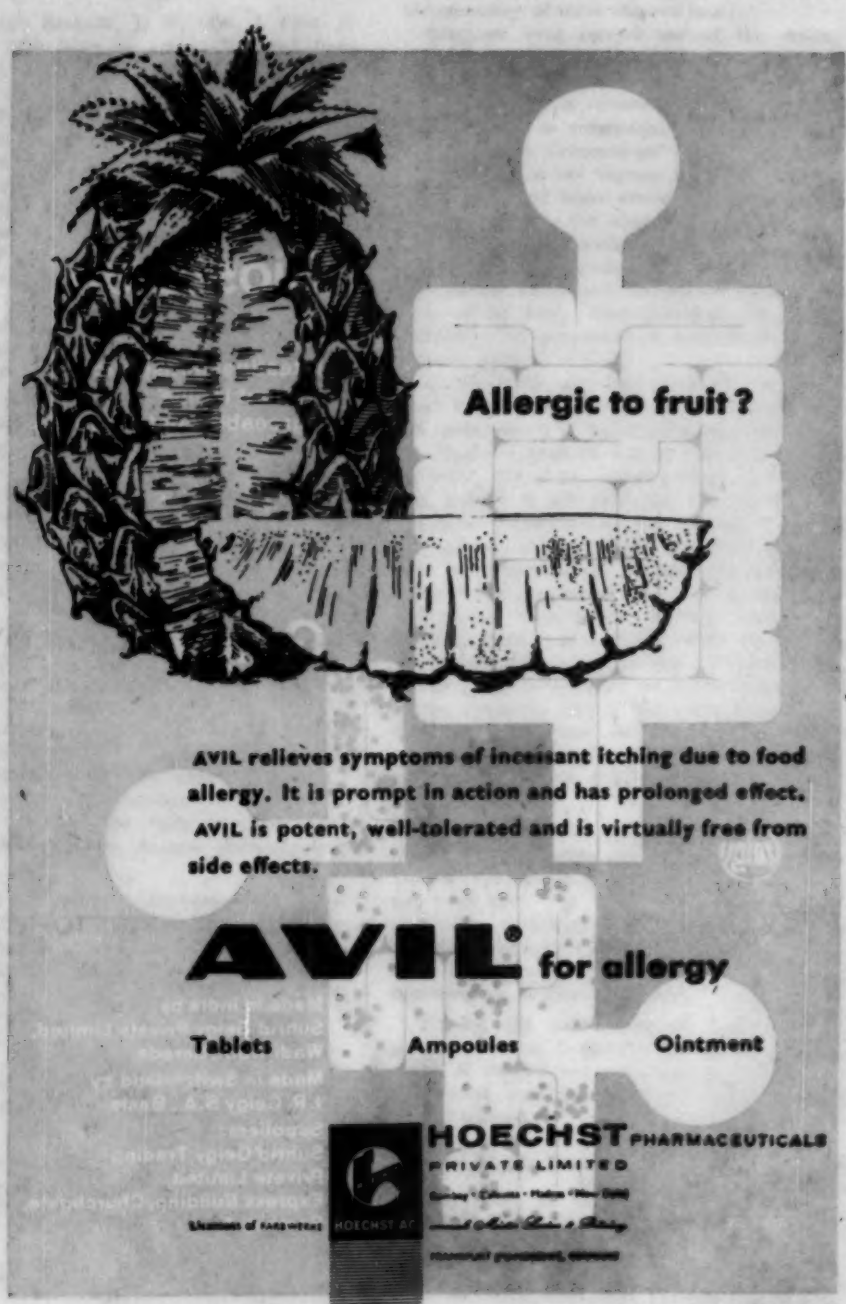
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In 8 of the 9 cases, admission to a psychiatric hospital occurred between 2 weeks and 5 months postoperatively. The most common clinical picture was that of an agitated depression (7 patients).

There was a remarkable consistency in the belief that the removal of the uterus and ovaries meant the end of all sexual life, at least in a feeling way. It was as though the loss of these organs was pictured as having an effect similar to that of the removal of the penis and testicles.

The loss of the ability to bear children may produce profound psychological reactions whether or not children are consciously desired. The ability to have children, even if it is never used, is of significance in the self-image of a woman.

The removal of the uterus and adnexa, because of their meanings in terms of sexual and childbearing functions, may profoundly affect the feelings of womanliness which are so crucial to the self-image. This would most likely lead to profound psychiatric disorders in those patients who have been least secure in this respect, and who, for one reason or another, are unable to mobilise adequate defences. These factors would seem to account for the high incidence of adverse reactions to pelvic operations.

Remote Effects of Obstetrical Hazards on the Development of the Child

REID, D. E. (*J. Obst. & Gynaec. Brit. Emp.*, **66**: 709, 1959) from Harvard Medical School and Boston Lying-in Hospital in giving a summary of the review of the problem observes:

Despite the probability that the number of cases of mental retardation and congenital defects may temporarily increase because current medical care will allow more individuals so afflicted to survive, there is every reason to believe that these conditions, although not curable, may be preventable. When the normal span of foetal existence is prematurely interrupted, the meagre evidence suggests the probability that the milieu rather than the foetus *per se* is largely at fault. Further, infants born alive and surviving with such common and permanent handicaps as cerebral palsy are rarely the products of pregnancies which have been normal in all respects.

The avenues to be explored appear unlimited and must not be circumscribed, for here research addresses itself to all phases of growth, both normal and abnormal. It is only in this broad context that effective medical planning for generations yet unborn can be made. This is in keeping with Medicine's greatest successes which have come through the intelligent adjustment of Man's environment which has so greatly reduced the physical and infectious hazards once threatening humanity. Life in its beginning also has an environment which seemingly could be manipulated beneficially had we but the knowledge required for so doing. More properly, is not the ultimate aim of medical science to prevent disease? This effort must begin by protecting the new individual *in utero* and during the process of birth.

Thus, both the clinician and the biologist must respond to this challenge. The clinician must continue to direct his attention to developing policies of patient management and champion the acquisition of hospital facilities and medical personnel that will afford maximum protection to the mother and assure her that her infant will be born without handicap.

Bronchiolitis in Infants

DENNIS, J. L., PALMER, M. AND CLEVELAND, R. W. (*J.A.M.A.*, **172**: 688, 1960) from the Children's Hospital of the East Bay, write:

The cardinal manifestation of bronchiolitis from any cause is expiratory wheezing; therefore, 'all that wheezes is not asthma'. Bronchiolitis in infants is nearly always the result of an infection, usually a virus, producing a typical age-group response to a simple respiratory infection that only mildly inconveniences the adult. Asthma can induce a similar picture, but its symptoms are often alleviated by epinephrine, its typical course is short, and repeated attacks are common. The infant with a single episode of infectious bronchiolitis is quite unlikely to develop asthma in later life, but most asthmatic children have been subject to attacks of bronchiolitis as infants. The tendency to overtreat infants with bronchiolitis probably reflects the lack of specificity of any mode of therapy. Although many new therapeutic agents have been prescribed, the average length of the hospital stay has not been altered in the 10-year period 1947-1957. Aminophylline poisoning, due to excessive dosage in rectal suppositories, has become one of the most frequent complications of therapy. For these reasons, treatment should be directed toward general supportive measures and the prevention of potentially fatal complications, the most common being bronchopneumonia, right heart failure, fluid and electrolyte imbalance, and iatrogenic drug intoxication.

The methylprednisolone used in this study was supplied for investigative purposes as Solu-Medrol by the Upjohn Company, Kalamazoo, Mich.

CURRENT TOPIC

AVIATION HYGIENE AND SANITATION

Attempts to limit the international spread of disease have a long history. In the nineteenth century many international sanitary conventions were signed, but as each had a specific objective, none of them replaced its predecessor or any other previous convention. Just after the Second World War, there were 13 such conventions and agreements in force at the same time, the result inevitably being diplomatic and procedural confusion, shipping difficulties and delays.

Article 21 of WHO's Constitution provides that the World Health Assembly should have "the authority to adopt regulations concerning . . . sanitary and quarantine requirements and other procedures designed to prevent the international spread of disease" and in due course the International Sanitary Regulations were drafted, to be adopted by the Fourth World Health Assembly in 1951 and generally accepted. Their aim is to ensure the maximum security against the international spread

of diseases with the minimum interference with world traffic. Specially they are directed against six quarantinable diseases—plague, cholera, yellow fever, smallpox, typhus, and relapsing fever—and the Tenth World Health Assembly made it clear that they refer expressly to those diseases, and place limits on the sanitary measures to be taken in respect of other infectious diseases.

General provisions in the international Sanitary Regulations require health administrations *inter alia* to ensure as far as practicable that airports in their territories have at their disposal sufficient organisation and equipment for the application of the Regulations; and are provided with supplies of pure drinking-water and effective systems for the removal and safe disposal of excrement, refuse, waste water, condemned food, and other matter dangerous to health. Certain airports (designated as sanitary airports) should also be equipped with an organised medical service and facilities to combat infection. There are no specific provisions, however, on such matters as how pure drinking-water is to be supplied or an effective waste-disposal system organised, health administrations being left to make their own arrangements.

From the point of view of airport authorities, therefore, the International Sanitary Regulations applied expressly to only six diseases, and they contained general, but not detailed, provisions. In 1950 the International Air Transport Association called the attention of WHO to the need for improved airport sanitation for the protection of crews and passengers against other diseases that might impair the efficiency of the crews and endanger the safety of the aircraft. This need was acknowledged by the Fourth World Health Assembly, which, in a general review of public health problems of air travel, enunciated certain principles that it felt to be generally applicable. The health of air crews should be protected at all airports *en route*. An aircraft cannot with safety take off from any airport unless every member of the flight crew is physically fit. Consequently, control should not stop short at the six diseases dealt with in the International Sanitary Regulations, but should include other diseases such as dysentery, food poisoning, gastro-enteritis, and malaria. High standards of hygiene and sanitation should be applied at all international airports and direct transit areas, at least on the main trunk routes. The Assembly outlined several measures that should be taken, in conjunction with the International Civil Aviation Organisation, to assist Member States in dealing with the problem. Among them was the preparation of a guide to hygiene and sanitation in the operation of airports open to international traffic.

This guide was prepared by a WHO Expert Committee on Hygiene and Sanitation in Aviation, and has just been published as an illustrated booklet. It reminds the reader of the phenomenal growth in the number of passengers carried by air on scheduled services throughout the world: about 90 million in 1957, as against 2½ million in 1937. This rapid growth puts a steadily increasing strain on health and air port facilities and personnel, and must, because of continuing expansion, present problems in the future that will be difficult to solve. But the need for clean and sanitary airports requires no emphasis; neither the appeal of air travel nor the efficiency of air crews can be allowed to be impaired. As the guide puts it, "airports should be the show windows of the countries concerned". It accordingly makes specific recommendations on water, food, and wastes.

Water

All water for drinking and other personal use by the crews and passengers, whether in the air or on the ground, should be free from chemical substances and micro-organisms that might cause illness in any form, and should also be not only safe but attractive as well, lacking turbidity, colour, and disagreeable taste or odour. Preferably it should come from well-operated public supply systems conforming to acceptable standards; but it should in any case follow the country's standards for drinking-water, and if the quality is lower than that established by the WHO International Standards for Drinking Water it should be given precautionary disinfection. Samples should be taken at least once weekly from representative points, and the results of bacteriological analysis reported to the airport health and operating authorities and used to determine whether the airport water meets the bacteriological standard and, if not, what corrective measures are required. The water supply should be inspected by a competent sanitary engineer at least once a year, and also whenever changes are made in the system that might affect the quality of the water. If the airport authorities are themselves responsible for the water supply they must provide safe water of a quality at least equal to that established by the WHO International Standards for Drinking-Water.

If water must be drawn from a supply of inferior or unknown quality for use by crews or passengers, it should be given sufficient treatment to destroy the cysts of *Entamoeba histolytica* and the virus of infectious hepatitis; all the other disease organisms generally found in contaminated water will be destroyed by this treatment. Boiling is effective except at altitudes above 3000 m (about 10,000 ft.). If chlorination is used, the water to be treated must be clear and free from noticeable pollution. Filtration can be used to remove suspended solid matter, and when done through porcelain filters or about 75 cm (30 inches) of filter sand can effectively remove cysts. Chlorination to about 0·3 parts per million (p.p.m) of residual chlorine destroys the vegetative forms of water-borne disease bacteria, but very much larger amounts, of the order of 8-10 p.p.m. of free available chlorine, are needed to kill amoebic cysts and inactivate the virus of infectious hepatitis. These large amounts may produce objectionable tastes and odours, and dechlorination is then advisable with sodium thiosulphate, sulphur dioxide, or some comparable reducing agent that is not itself toxic. All water should be chlorinated to such an extent before loading on aircraft that it contains 0·3 p.p.m. of free available chlorine 30 minutes after treatment.

It is not enough that the water supply should be safe. Care should also be taken to ensure that drinking fountains, pipes, aircraft water systems, water hose, and water carts—everything, in fact, in which the water is

kept or through which it passes—are easy to clean, and are kept clean.

Food

Food should be of good sanitary quality, placed in refrigerators as necessary, and kept scrupulously clean. All meat and fish should be thoroughly cooked before serving. In tropical countries infections with *Ascaris* is widespread, so that raw foods such as green salads and chopped raw vegetables should be avoided. All food should be carefully handled and protected from contamination by animals, insects, soiled hands, and dirty surfaces. To prevent chemical poisoning, vessels and utensils containing such elements as cadmium and lead should be avoided, the strictest precautions observed regarding the use of poisons around food areas, and only foods of the highest purity purchased. Because of the special hazards of foods like cream, milk and milk products, cracked eggs (especially ducks'), shellfish, gravies, and meat salads and dressings, preference should be given to plain simple foods requiring the minimum of handling. Raw oysters and other shellfish should not be used unless it is certain that they are fresh, uncontaminated, and come from clean areas. Milk and milk products should be sterilised and kept in bottles; and the opened bottles should remain in refrigerators.

Food-handlers should be placed under medical control, and no person should be employed who is a carrier, or in the communicable period, of a disease, or suffers from a gastro-intestinal infection or an acute sore throat, or has on the exposed portion of the body an open wound, infection, or skin disease. Spitting and the use of tobacco in any form should be prohibited in areas where food is prepared. All those who prepare or handle food should keep their hands and fingernails scrupulously clean, wear clean garments, handle food in such a way as to minimise the risk of contamination, and work with surfaces, receptacles, and utensils that are easy to keep clean and regularly kept clean. The buildings and premises in which they work should be so designed as to make the task of protecting the food from contamination easy. Special cleansing and germicidal treatment should be given to dishes and utensils before use; the guide gives details of methods that can be used, both in airports and on aircraft.

Wastes

The guide contains a detailed description of the handling and disposal of toilet wastes, sewage, air-sickness containers, and refuse, at airports and on aircraft. Particular care should be taken to avoid spillage or open exposure, since this leads to fly and rat infestations. If practicable, the final disposal of garbage should be at a point remote from the airport; if not, it can be burned, buried, or ground and discharged into a sewer; open pits or dumps are unsatisfactory because of flies and rats. On aircraft the provision of watertight receptacles, easily cleansable floorings, soil-cans, tanks, and wash-basins is important.

Vector Controls at Airports

Rooms used by crews and passengers in transit at international airports should be effectively mosquito-proofed in areas where mosquitoes and flies are prevalent. Every day, any mosquitoes that may have gained entrance should be destroyed. Walls and ceilings, particularly in sleeping quarters, should be sprayed regularly with residual insecticide, in accordance with the recommendations of the WHO Expert Committee on Insecticides. Destruction of the larvae of mosquitoes should be systematically carried out in the entire area within mosquito flight range of buildings used by crews and passengers, by ditching, draining, filling, and elimination of water containers, or by application of larvicides. To keep the area within the perimeter of the airport free from *Aëdes aegypti* in its larval and adult stages, active anti-mosquito measures must be maintained over an area of at least 400 m (¼ mile) around that perimeter, and all water cisterns and tanks covered or screened. For the control of flies the best method is to secure community co-operation in eliminating their breeding-places, and to combine this with scrupulous cleanliness at the airport itself and spraying or other methods of killing the insects. All organic wastes should be disposed of quickly to prevent flies from breeding in them.

The control of rats is not easy, and it is advisable that the services of experts be sought in devising and maintaining a control programme. The first step towards success is good housekeeping, general cleanliness, and orderly storage of all materials, food or otherwise, off the ground or floor and in piles or bins. Rat-proofing is essential: a section of the guide is devoted to ways and means of doing it properly. Not a simple task, this, for rats, apart from their gnawing powers, can jump 60 cm (24 inches) vertically, burrow equally far into the earth, climb smooth pipes up to 7·5 cm (3 inches) in diameter, and travel along horizontal electric wires. As both the flea and the rat are involved in the transmission of plague, equipment and facilities are necessary for disinsecting air crews and passengers, and for disinsecting, disinfecting and deratting baggage, other articles such as bedding, and portions of the aircraft. A rodent control programme that includes the rat-proofing of buildings should be an integral part of the health services of every international airport.

Ground Installations

To carry out this sanitary work airports must have adequate staff, equipment and premises. The adequacy and efficiency of ground installations is of interest and concern to many groups, and to increase efficiency and co-operation committees such as national and local facilitation committees should review procedures and practices and study possible improvements. Health authorities, airport authorities, air transport officials, caterers and others interested should be represented on a review committee that will watch over the type, quality and condition of equipment, the adequacy and promptness of operations, and the proficiency, intelligence and competence of personnel. (*WHO Chronicle*, **14**: 219, 1960).

NOTES AND NEWS

General Assembly of the World Medical Association

The following special topics are in the programme of the XIVth General Assembly of the World Medical Association to be held at Berlin Congress Hall, West Berlin on September 18-22, 1960

I. Evaluation of Increased Cost of Medical Care under Social Security Scheme 1952-1957 statistical comparisons from Chile, France, Japan, Philippines, Switzerland and the United Kingdom.

II. The Child and Technical Civilisation aspects of this subject being developed as follows :

Pediatric Problems, Prof. Dr. Med Benholdt-Thomsen, Director, Paediatric Clinic, Cologne University.

Adolescent Psychiatry, Prof. Dr. Med. Asperger, Director, Paediatric Clinic, Innsbruck University.

Social Insurance Aspects, Prof. Dr. Med Hellermann, Director, Institute of Forensic and Social Medicine, Kiel University.

III. What Readers of Medical Journals Want and What the Readers Actually Receive.

Presiding : Dr. Stanley S. B. Gilder, Editor of *World Medical Journal* and Dr. Wiehelm Theopoll, Vice-President, Landesarztekammer Hessen. Dr. E. Mazanek, Executive Editor, *Osterreichesche Arztezeitung* on "The arrangement of a medical organisational Journal". Dr. Trummert (Germany) on "the arrangement of a Specialist Journal". Dr. J. F. Volrad Daneke, Representative, Central Press Agency, German Medical Association, on 'Stylistic and Graphic make-up of a Journal'. Dr. Gerhard Joseph, Canad. Phil. (Austria) on 'The Significance of Medical Press Bureaux'.

IV. International Film Programme.

Topic : Postgraduate Medical Education for the Doctor through medical films. This programme will be held simultaneously with the Assembly Business Sessions. Some 50-60 medical films are scheduled on this programme.

V. 63rd Dentche Arztetag (annual meeting of German Medical Association). During the 'German Doctors Day' the association presents its highest award, the Paracelsus Medal to eminent doctors selected by the Association.

Rockefeller Grants Announced

Indian institutions and researchers will receive $729,770 (about Rs. 36 laks) from universal grants announced by the Rockefeller Foundation on 22-7-1960.

The Foundation also announced a list of 30 fellowships. These fellowships had been awarded to individuals from 14 different countries including India.

The All-India Institute of Medical Sciences, New Delhi will receive $500,000 for the non-rupee expenses of building and equipping a teaching hospital, which is the next unit planned under the institute's construction programme. A further $30,500 to help finance about 60 scholarships for graduate medical studies at the Institute was also in the list.

The Indian Cancer Research Centre, Bombay, has been granted $26,000 for work in biophysics research over the next five years.

Penicillin Output at Pimpri Increased

The annual report of the working of the State-owned penicillin factory at Pimpri released on Aug. 6, 1960 shows consistent increase in production in the factory.

During 1959-60, about 33·15 million mega units of penicillin produced in the factory represented an increase of about 33 per cent over last year's production.

The report also reveals a number of plans—which are nearing completion—for the future development and expansion of production of penicillin by 60 per cent. It is proposed to undertake the manufacture of a number of other antibiotics as well.

An interesting feature of all development and expansion plans is that these would be financed from the penicillin factory's own general reserves which today stand at Rs. 1,80,00,000 after providing for nearly Rs. 1,20,00,000 as income-tax and setting apart more than Rs. 65 lakhs for depreciation.

Construction work of the Rs. two crore streptomycin project of the factory is progressing according to schedule and the plant is expected to go into production sometime towards the end of 1961.

A pilot plant for the manufacture of 1·5 tons of tetracycline is likely to go into production by the end of the current financial year.

The manufacture of vitamin C with a process worked out and developed in the National Chemical Laboratory Poona, would soon be undertaken by the factory. A 60-ton capacity plant for the manufacture of vitamin C to be set up at a cost of about Rs. 60 lakhs is expected to start production by 1962. At present all requirements of vitamin C in the country is met by imports from outside the country.

The Managing Director of the factory Mr. S. T. Raja, said that the factory's antibiotic research laboratory had discovered a "promising antifungal antibiotic" and was working on it before bringing it into the market. He also stated that with a view to saving foreign exchange in the procurement of a number of new materials and chemicals used by the factory it had decided to set up a number of ancillary industrial units around the factory.

A programme of training about 30 young university students in six months had been started by the factory. About 60 students have been trained since 1958.

Hospital for All-India Institute of Medical Sciences

A 650-bed hospital is proposed to be built at the All-India Institute of Medical Sciences in New Delhi at an estimated cost of Rs. 4,25 crores.

The Health Minister giving this information in the Lok Sabha on 2-8-60 said that the Rockefeller Foundation had agreed to provide 500,000 dollars and the Technical Co-operation Mission had allocated a grant of Rs. 290 lakhs for the construction and development of the hospital.

Estimates amounting to Rs. 57·61 lakhs for the construction of the framework of the hospital during the Second Five Year period has been approved recently.

Treatment of Mental Cases

The Government of Maharashtra has appointed a committee under the chairmanship of Dr. De Quadros,

Surgeon-General, to recommend to the Government ways and means of improving facilities for the treatment of mental cases in the State. Dr. K. R. Masani is a member-secretary of the Committee. The other members of the Committee are the Superintendents of the four Government Mental Hospitals in the State.

The committee will submit its report within a period of three months.

Filaria Clinics

A proposal has been made that filaria clinics be established in large hospitals in filarial areas during the Third Five-Year Plan period, said Shri D. P. Karmarkar, Minister of Health, in a written reply to a question in the Lok Sabha on 5-8-60.

The Minister added that the exact number of clinics to be established had not yet been decided. Each clinic was estimated to cost about Rs. 25,000/- per year.

International Congress on Mental Retardation

The Second International Congress on Mental Retardation will take place in Vienna from August 14-19, 1961.

The preliminary programme includes the discussion of the following: 1. Organic causes of mental retardation. 2. Endocrine disorders and mental retardation. 3. Encephalopathy and mental retardation. 4. Genetic and metabolic problems. 5. Mental retardation caused by psychosis in childhood. 6. Pseudo-feeblemindedness. 7. Diagnostics and tests. 8. Evaluation of histories. 9. Social adjustment of mentally retarded children. 10. Child guidance. 11. The physician and special schools. 12. Pharmacotherapy.

To these subjects outstanding experts will be invited to give lectures. It is planned to present papers and to arrange a scientific exhibition.

Further information may be obtained from Prof. Dr. K. Kundratitz, Universitats-Kinderklinik, Wien—Vienna—Vienne, Osterreich—Austria.

Joint Annual Conference of Various All-India Medical Specialists' Conference

The joint annual conference of the various All-India medical specialists' associations, viz., the Association of Physicians of India, the Indian Association of Chest-Diseases, the Cardiological Society of India, and the Neurological Society of India, is to be held at Madras in the 2nd week of January 1961.

A Reception Committee under the Chairmanship of Dr. R. Subramaniam has been formed to make arrangements for the conference. It is expected that this conference will draw from all over India a large number of specialist delegates, to take part in the deliberations.

More Hospitals for Delhi during Third Plan

The Union Territory of Delhi is likely to have two more general hospitals, a paramedical personnel training institute, a school of pharmacy, a drug control laboratory, a school health scheme and 2,300 more hospital beds.

While finalising these proposals before submission for inclusion in the third five-year plan, the Delhi Administration, the Corporation and the New Delhi Municipal Committee have stressed the need for the control of communicable disease and the supply of pure drinking water to the villages.

The dearth of trained personnel, it has been pointed out, would create difficulties in the implementation of various schemes. To meet the shortage, it is proposed to allocate Rs. 1·46 crores to the Azad Medical College. A paramedical personnel training institute is proposed to be set up with an allocation of Rs. 11 lakhs. Arrangements are being made in Irwin Hospital to train specialists and technical personnel. Trained nurses, radiographers and laboratory assistants will be trained in Irwin Hospital and other hospitals run by the Corporation. The training programme will cost Rs. 1·6 crores.

The new proposals for the extension of medical facilities, it is estimated, will cost Rs. 7·80 crores. Hindu Rao Hospital and Shahdara General Hospital will have more beds. The general hospital will be built in Tilak Nagar and Kishanganj.

By the end of the third Plan, it is estimated, the number of beds in hospitals will be about 7,300. The figure includes TB and maternity beds. The number of beds in hospitals is expected to go up to 5,000 by the end of the current Plan.

The British Pharmaceutical Codex for the Purposes of Drugs Act, 1940 and Drugs Rules, 1945

The British Pharmaceutical Codex 1959 become operative from 1st September 1960 in the Madras State for the purposes of the drugs Act, 1940 and the Drugs Rules, 1945. The standards of identity, purity, and strength specified therein will be rigidly enforced from the said date.

Fighting Trachoma in Bihar

Patwah, a suburban eastend riverside township, 11 miles away from Patna, has been selected as one of the country's 3 centres to be devoted to research into and treatment of trachoma. This pilot project has been sponsored by the Government of India in collaboration with expert ophthalmologists from Soviet Russia.

A preliminary survey under the project has been undertaken to determine the extent and virulence of the disease and the countryside folk of different age-groups are being examined.

Soviet ophthalmologist V. Preo Brinjiski and Dr. Gupta, Director, All-India Trachoma Pilot Project, visited Patwah centre and went round neighbouring villages in their pursuit of random sample survey.

First Blind School in Orissa

A school for blind children and a hostel for 50 students will start functioning at Bhubaneswar from August 15, 1960, under the control and management of the Orissa Branch of the Indian Red Cross Society. This school will be the first of its kind in the State.

Mr. Y. N. Sukthankar, Governor of Orissa, has been giving his personal attention and encouragement for the development of such institutions in the State.

The Government House at Cuttack has been vacated by Mr. Sukthankar for providing accommodation to a number of social welfare institutions, including a "Sisusadan" and a 150-bed hospital for children.

Drug Bank

A proposal to start a 'Drug Bank' to help poor patients has been approved by the Managing Committee of the Andhra Pradesh Chemists and Druggists' Association recently. The details had yet to be finalised, after which the Bank would come into existence. The proposed bank would receive donation of drugs from about 400 members of the Association, as also doctors and patients.

First Prize for Pfizer Film

The Pfizer film "Bronchial Carcinoma" recently won the first prize (Commercial Category) in a competition held by the British Medical Association. A certificate and a cheque for 50 guineas were presented to Dr. F. R. Fletcher who received the prize on behalf of Pfizer.

Quarantine Restrictions Withdrawn

Information has been received by the Director General of Health Services that the Jordan health authorities have withdrawn quarantine restrictions on account of cholera against passengers from Raipur District, Madhya Pradesh State, with effect from July 21, 1960.

Health Conditions in India during June

According to information available, the country remained free from plague during June. Smallpox and cholera, however, continued to be reported from some districts.

The following detailed information is based on preliminary reports received up to the week ended June 25, 1960.

Cholera—Considerable incidence was reported from Calcutta city during third week. Mild incidence was reported throughout the month from Howrah district in West Bengal. Mild incidence was also reported from Nowgong district in Assam; Patna, Shahabad, and Purnea districts in Bihar; Bilaspur district in Madhya Pradesh; and the Union territory of Delhi during the third week. Mild incidence was reported from Kamrup district in Assam; Gaya district in Bihar; Surat district in Gujarat; Bijapur and Belgaum districts in Mysore State; and Lucknow district in Uttar Pradesh during the second week. Mild incidence was also reported from Srikakulam district in Andhra Pradesh; Mikar and North Cachar Hills district in Assam; and Monghyr district in Bihar State during the first week.

Smallpox—Mild incidence was reported throughout the month from the districts of Srikakulam, East Godavari, Guntur, Nellore, Anantapur and Chittoor in Andhra Pradesh; Ahmedabad district in Gujarat State; Nagpur district and Greater Bombay in Maharashtra; Belgaum, Bellary, South Kanara, Dharwar and Kolar districts in Mysore State; the districts of Allahabad, Bijnore, Bulandshahr, Dehra Dun, Fatehpur, Faizabad, Kanpur, Lucknow, Mainpuri, Meerut, Muzaffarnagar, Saharanpur and Sultanpur in Uttar Pradesh; the Union Territory of Delhi and Pondicherry. Mild incidence was reported from West Godavari and Cuddapah districts in Andhra Pradesh; Amreli district in Gujarat State; North Satara, Sholapur and Bhandara districts in Maharashtra; Mayurbhanj district in Orissa; Jaipur, Sikar, Jodhpur, Udaipur, Churu and Kotah districts in Rajasthan; the districts of Aligarh, Ballia, Deoria, Tehri-Garhwal, Gonda, Hardoi, Kheri, Pratapgarh, Rae-Bareilly, Shahajahanpur and Unnao in Uttar Pradesh during the third week. Mild incidence was also reported from the districts of Tanjore, North Arcot and the Madras city in Madras State; Bilangir-Patna, Dhenkanal district in Orissa State; and Burdwan district in West Bengal during first and second weeks.

Gastro-enteritis—During the week ended June 18, a total of 365 cases and 91 deaths were reported from Uttar Pradesh as against 456 cases and 101 deaths during the previous week and 175 cases and 37 deaths during the week ended June 4, 1960.

Kyasanur Forest Disease—One case was reported from Shimoga district in Mysore State during the fortnight ended June 18 as against 2 cases reported during the previous fortnight.

Influenza—Stray cases were reported from Assam and West Bengal.

REVIEWS

An Introduction to Surgery for Dental Students—By R. P. Jepson, F.R.C.S. and B. N. Catchpole, F.R.C.S. 1959; Orient Longmans Private Ltd., 17, Chittaranjan Avenue, Calcutta 13; 8½"×5½"; pp. 106; price 21s. net.

It is a good handy book of general surgery for dental students. Written in a very concise form it deals with all aspects of the subject. The authors have specially dealt with the surgical condition of the head and neck leaving out other portions of the human body which least concern dental students. The reviewer is of the opinion that the authors would have done a great service to these students had they included a chapter on sterilisation of instruments, etc., and another on suture materials and different types of suturing. The chapter on shock and haemorrhage has been well written, but that on the macropathology and micropathology of disease has been very briefly dealt with.

J. K. MAZUMDER

Midwifery (A Text-book for Pupil Midwives)—By Gordon W. Garland, M.D. (LOND.), F.R.C.O.G. and Rosemary C. Perkes, S.R.N., S.C.M., M.T.D. 1959; Orient Longmans Private Ltd., 17, Chittaranjan Avenue, Calcutta 13, 8½"×5½"; pp. xi+290; price 21s. net.

Written with the purpose of providing the essentials of normal midwifery which can be used by the pupil midwife, the volume contains all the relevant information needed during her training period. Though great

stress is laid on normal delivery and description of the common abnormalities is rather meagre, yet it enables the midwife to recognise the slightest deviation from the normal and she can continue to take an intelligent interest in the progress of the patient and get medical help in time.

The language is simple and easily understood even by the average pupil midwife. The 67 illustrations are very clear and neat and add to the understanding of the subject. The index and the introductory chapter are helpful to the reader. Chapter II is interesting and attractive.

This book is an excellent one and should find its way into the schools of nursing and other institutions in India where nurses are trained in midwifery.

A. THOMAS

OBITUARIES

Dr. (Mrs.) Mehra J. Wadia

Dr. (Mrs.) Mehra J. Wadia was born on September 23, 1903. She had a very distinguished school and college career. She passed her M.B.B.S. in 1927 from the Grant Medical College, Bombay. After obtaining her M.D. Branch III of Bombay University in 1929 she proceeded to Edinburgh and was admitted a Fellow of the Royal College of Surgeons in 1930. On her return she joined the Cama and Albless Hospitals in 1931 as hony. Assistant Surgeon, next as Hony. Surgeon and Hony. Obstetrician and Gynaecologist. In 1947 she was appointed as Superintendent of the Hospital which post she held till September 1958 when she retired on attaining the age of 55. It was during her regime in this hospital that a separate nursery block was built and medical social workers' and health visitors' posts were created. She was an excellent teacher and was examiner for M.B.B.S. and M.D. degrees. She took keen interest in the working of the Indian Medical Association, Bombay Obstetrics and Gynaecology Society, Association of Medical Women in India, National Council of Women in India, State Council of Women in India and many others. She recently helped the Bombay Branch, I.M.A. as Chairman of Ladies Committee for the Silver Jubilee Celebrations.

Her charming personality, spirit of gaiety, keen sense of humour endeared her to all.

Dr. (Mrs.) Mehra J. Wadia passed away in Bombay on 7th June 1960 after a very short illness.

Capt. Bimal Bikash Biswas

Capt. B. B. Biswas, a member of the Dooars Branch, I.M.A., passed away on July 6, 1960 at a comparatively early age of 45.

Capt. Biswas graduated from the Carmichael Medical College, Calcutta (now R. G. Kar Medical College) in 1938. He served the Army Medical Corps in World War II for a period of 6 years, and joined Chuapara Tea Estate in 1947.

Dr. Banu G. Malik

Daughter of a very eminent Vohra family of Jabalpur Cantonment, Dr. Banu G. Malik was born on January 1, 1926. She was educated at Johnson's Girls High School, Jabalpur and the Isobels Thobern College of Women at Lucknow. She obtained M.B.B.S. from the Christian Medical College at Vellore in 1951. Immediately after, she joined the Lady Elgin Hospital at her home town. From 1953, she started a private clinic of her own at Miloniganj, Jabalpur.

Dr. Malik passed away on 7-7-60 after a short illness. She endeared herself by her selfless service to the suffering womanhood and children of Jabalpur. Her philanthropy was available to all. She infused a new life in the social welfare activities of the I.M.A., Jabalpur branch.

Jabalpur citizens and the local medical association lost a dynamic secretary in Kumari Malik whose place will be hard to fill.

DR. (MRS.) MEHRA J. WADIA CAPT. B. B. BISWAS DR. BANU G. MALIK

YOUR QUESTIONS

Correspondents should give their names and addresses (not necessarily for publication) and include all relevant details for the questions which should be typed. Questions of medical interest will only be accepted for this section. They should be sent in a separate envelope marked "Your Questions". Questions of general interest will be published in preference. Lack of space precludes answering all the questions received.

ED.—*J. Indian M. A.*

Abrasion—Its Medicolegal Aspects

Q. An abrasion is held to be an important injury in medicolegal practice, for it may serve as a pointer to a deep-seated violence. Often the decision about the nature of the weapons causing the abrasion becomes a serious problem for the doctor. I, therefore, solicit your help in the clarification of the following points:

1. What is the difference between a non-infected fresh abrasion, and a non-infected freshly inflicted incised, lacerated or punctured wound?

2. What kind of weapons can cause abrasions—the shape and appearance of such abrasions, and the mechanism responsible for such difference?

3. What can cause a regular (with uniform edge), linear (without any breadth), simple, non-infected abrasion unaccompanied by any bruise or ecchymosis? Can pins, thorns, or pointed pieces of broken glass inflict such abrasions? How will you classify the linear scratches by a sharp-pointed lancet (as is done in vaccination)?

4. When abrasions result from friction of the skin with rough surfaces like ropes, *jhamas* or knobbed sticks, are bruises or ecchymoses associated with such abrasions?

5. What is the time required for healing of a simple, non-infected abrasion. How long would the scar persist?

6. Does the size, shape and breadth remain unaltered and unaffected by healing. If so, why and how?

7. Are teeth and finger nails blunt edged weapons or sharp edged ones?

8. Will two different doctors examining the same abrasion at different times, e.g., (a) on infliction, and (b) after healing and scab formation respectively, come to the same or different conclusions about the nature of injury and the kind of weapon used? If differently, please explain why?

Ans. The simplest of all medicolegal wounds are abrasions, commonly known as scratches. They are characterised by desquamation of the superficial layer of the skin, i.e., the cuticle, and are caused by blunt weapons. They are measured length- and breadthwise, but not in their depths—the reason is obvious from the character of the wounds as detailed above.

Medicolegal Importance—Abrasions around the throat suggest manual compression, i.e., strangulation; about the nose and mouth suffocation; and about the thighs, genitals and anal regions bring corroborative evidence in rape and unnatural sexual intercourse.

Only certain types of abrasions can fairly give the indications of the causative agents, e.g., semilunar abrasions by finger nails, bite marks by teeth—at least 3 or 4 separate and distinctive abraded marks on slightly curved lines representing the teeth of upper and lower jaws and placed one opposite the other.

Abrasions showing longitudinal, more or less parallel lines, usually multiple, indicate that the poor victim must have been dragged along a rough surface.

1—Incised, lacerated, lacerated punctured or incised punctured—all are deep wounds and go beyond the superficial layer of the skin. They all differ from abrasions in their origin.

2—By blunt weapons as explained above.

3—Explained above. Pins (sharp-pointed) and pointed broken glass will produce incisions. Scratches (commonly called) by lancets are incisions. So they fall under incised wounds.

All abrasions bleed very slightly, they heal rapidly in 6 to 7 days (unless infected) under scabs and leave no permanent marks, i.e., scars, because the fibroblasts do not take any share in the repair of the broken cuticle.

4—Depending on the amount of force, site of the wound and resiliency of the skin, it is not unusual to find bruises or contusions in a state of alliance. (The shape of the bruise is very helpful to identify the type of the weapon used).

5—Answered under 2.

6—All wounds shrink in the course of their healing; that is the usual law of repair, unless infected.

7—Both the agents are examples of blunt weapons.

8—It entirely depends on the praisworthy acumen of the individual; no comment is necesary.

CORRIGENDA

VOL. 35. NO. 2, JULY 16, 1960

Page 66: The subheading "Graduate Medical Examination in America" *should read* "Graduate Medical Education in America".

Page 71: Figures 3 and 4 suffered inversion during printing.

Page 89 (under caption XIX Bengal Provincial Medical Conference, 1960, Baruipur): Para 1, lines 4-5, viz., ". . . . Dr. P. K. Banerjee was the Organising Secretary. . . ." *should read* ". . . P. K. Roy Chowdhury was the Organising Secretary. . . ."

Page 91: The picture on top right is of Dr. P. K. Roy Chowdhury (*not* P. K. Banerjee), Organising Secretary.

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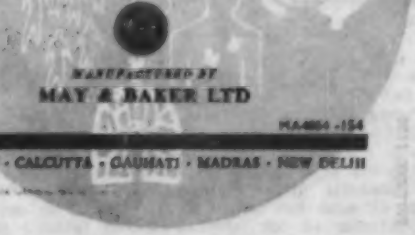

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SUPPLEMENT

Journal of the Indian Medical Association

VOL. 35, No. 5 CALCUTTA SEPTEMBER 1, 1960

ASSOCIATION NOTES

PAY SCALE AND STATUS OF RAILWAY MEDICAL OFFICERS

The following is a copy of the memorandum submitted to the Minister of Railways, Government of India, on behalf of the Indian Medical Association.

"The Indian Medical Association has, in the past, made several representations to the Railway Board with regard to the remuneration and status of medical officers, particularly Assistant Surgeons Grade I employed by the Railways.

The recommendations of the Second Pay Commission appointed by the Government of India, recently, do not appear to do justice in meeting the situation in respect of the grievances of the Railway Assistant Surgeons Grade I. It has been conceded by the Commission, while discussing the scale of pay of Assistant Surgeons Grade I (not in Railway service) that their scale of pay should be revised and improved, vide paragraph 11 & 12 of Chapter XVII of its Report. If the Commission's recommendations with regard to Asst. Surgeons Grade I, are given effect to, even then it has stated, that the Asstt. Surgeons Grade I do not come up at par in their pay scale, with Class II Officers of the Government of India. The Pay Commission has given several reasons for this observation. If that be the situation with regard to Asst. Surgeons Grade I (not in Railway service), then it will be apparent that further down in the same report in paragraph 17, the Pay Commission has failed to appreciate the lot of the Asst. Surgeons Grade I in Railway service. Permitting of private practice in paragraph 17 has been the reason for not recommending a higher scale of pay for these officers. The Railway Asst. Surgeons themselves and the Indian Medical Association, are both emphatic, that private practice should not be allowed to wholetime Medical Officers, whether employed in the Railways or elsewhere. Furthermore we would like to mention that there is hardly any private practice worth the name, which is available to Asst. Surgeons Grade I in the Railways.

Another aspect of allowing private practice to Asst. Surgeons Grade I, has been adequately dealt with by the Railway Anti-Corruption Enquiry Committee in its report (1953-55), on page 90 as under :—

> "We also recommend that the Railway doctors should be debarred from private practice and their emoluments may be suitably increased to compensate them for the loss of income from this source".

Finally, we would like to bring to your notice that in the past several years, the Indian Medical Association has repeatedly forwarded its own recommendations on Pay scale and Status for doctors in Government and other Departments. The last representation made to the Railway Board was on 23/24th February, 1960 under cover of our letter No. 2483/59-60.

In the end we would summarise our request for implementation of the following :

1. That private practice for Asst. Surgeons Grade I in Railway service should be abolished.
2. Consequent to the above, the pay scale of these officers should be the same as that recommended for Asst. Surgeons Grade I in paragraph 12, Chapter XVII of the Pay Commission Report.
3. The Indian Medical Association holds that the consolidated pay-scale suggested in the last line of paragraph 12, Chapter XVII should be adopted for Asst. Surgeons Grade I in the Railways.
4. That these Officers should be made Gazetted Officers to improve their status to bring it at par with other Railway employees, enjoying the same scale of pay.

May we request your personal intervention in this matter because the representations made, in the past, have not received the attention they deserved. Should you feel that a personal discussion is desirable, the Association would be pleased to wait upon you in deputation."

The relevant paragraphs of Chapter XVII of the Pay Commission's Report referred to above are annexed.

MEDICAL AND PUBLIC HEALTH STAFFS

(Page 191-192)

"11. It does not seem to us desirable that doctors, who are in the whole-time employment of the Central Government for providing medical attendance and treatment to Government servants, should be permitted private practice, and we recommend stoppage of private practice where it is allowed at present. In cases in which the scale of pay has been fixed, making allowance for private practice, and this is usually the case, the loss of income resulting from prohibition of private practice should be compensated by a suitable non-practising allowance, or by replacing the present scale by a higher consolidated scale of pay. For each grade we accordingly propose two alternative rates of remuneration—(i) a scale of pay with a non-practising allowance attached to it, and (ii) a consolidated scale of pay. We consider the rate of non-practising allowance approved for the Central Health Service, viz., 25 per cent of pay subject to a minimum of Rs. 150 and maximum of Rs. 400 to be suitable, and we have adopted those rates in our proposals."

(Page 192)

"12. Grade I of Assistant Surgeons provides the base for the pay structure of medical officers. On a comparison of the qualifications, duties, responsibilities etc. of an Assistant Surgeon with those of Class II officers generally, we see no justification for allowing a lower remuneration to the Assistant Surgeon, and we consider that the total value of the Assistant Surgeon's scale should be, more or less, equal to the standard Class II scale. At present, the Assistant Surgeon's scale has been fixed low on the ground that he is allowed either private practice or a non-practising allowance. The question of private practice does not arise in the case of the Central Health Service; for no member of the

Service will be allowed private practice. And we have found on examination that even after taking the non-practising allowance into account, the total emoluments of an Assistant Surgeon Grade I during his service are considerably small than those of a Class II officer on the standard scale. This is not all. He gets a smaller pension and gratuity, for non-practising allowance is not taken into account in calculating pension or gratuity. The difference is further increased by the difference, on an average of 4 years, in the age at the time of entry into service. In the relevant chapter, we have recommended that in the case of medical officers non-practising allowance should be taken into account in calculating pension and gratuity. But we find that this alone will not be sufficient to bring the Assistant Surgeon's remuneration more or less, on par with the standard rate of remuneration for Class II; improvement in the pay scale will also be necessary. Proceeding on this basis, we recommend for Assistant Surgeons Grade I the scale of Rs. 325-25-500-50-800-EB-30-800, plus the non-practising allowance at the rate indicated earlier, or in the alternative the consolidated scale of Rs. 475-25-650-30-740-EB-30-950."

(Page 193)

"17. The recommendations made in the preceding paragraphs do not apply to medical officers in the Railways. In the Railways, doctors are generally permitted to have private practice. We are of the view that if the present arrangements continues, and also in the case of a similar arrangement elsewhere there is no justification for any improvement of the pay scales of the staff concerned. We, accordingly, recommend for medical officers in the Railways the following rates of pay :

Chief Medical Officer	...	1800-100-2000
(The Chief Medical Officer is not allowed private practice even at present)		
Divisional Medical Officers	...	700-40-1100-50/2-1300
Assistant Medical Officers	...	375-25-500-30-590-EB-30-800-EB-30-830-35-900
Assistant Surgeons Grade I	...	340-15-475-20-575

But, in case the Government decide to withdraw permission for private practice, the pay structure recommended for the Central Health Service should be adopted in the Railway also."

XXIV UTTAR PRADESH STATE MEDICAL CONFERENCE, MEERUT, 1959

The 24th Session of the U. P. State Medical Conference under the auspices of the Uttar Pradesh State Branch of the Indian Medical Association was held on 24th and 25th October, 1959 at Meerut. Pandit Jawahar Lal Nehru, Prime Minister of India, inaugurated the Conference. The Medical Profession of the State was well represented at the Conference.

The social side of the Conference was well organised and offered good opportunities to the members joining the Conference to come in close touch with one another and thus help the creation of a very healthy *esprit de corps* among the members of the profession from different parts of the State.

The Scientific section was fairly successful. The inauguration ceremony of the section was performed by by Dr. B. B. Bhatia, Professor of Medicine, K. G. Medical College, Lucknow. A well arranged Pharmaceutical Exhibition was also arranged. The opening ceremony of the Exhibition was performed by Dr. K. M. Lal, Director, Medical and Health Services, Uttar Pradesh, Lucknow.

The holding of the 24th Session of the U. P. State Medical Conference marked the completion of 25 years of the existence of the U. P. State Branch of the Indian Medical Association founded at Meerut on October 12, 1934 by such giants of the profession as Late Dr. Bhupal Singh of Meerut, Late Dr. Sen of Kanpur, Late Dr. M. Atal and Dr. H. Hukku of Lucknow. The Silver Jubilee of the U. P. State Branch was thus celebrated at Meerut along with the conference.

INAUGURAL ADDRESS

Pandit Jawahar Lal Nehru, the Prime Minister of India delivered his inaugural address amidst applause. Pandit Nehru referred to the ancient system of Medicine, Ayurveda and Unani and said "In the sphere of medical science we have to test our ancient systems on the basis of scientific approach. These systems are repositories of great ancient knowledge and deserve our respect but all this has to be put to the scientific test". Amidst other things he stressed on rural medical care and wanted that young medical graduates should work for some years in the village.

WELCOME ADDRESS

Dr. J. L. Caroli extended hearty welcome to the Prime Minister, the guests and delegates. In his address he described how the Association grew from a small beginning to its present state. "From a humble beginning it has spread out like flames to other States also and now we have 658 branches in the country." He paid a glowing tribute to Late Dr. Bhupal Singh who might be called the father of the U. P. Medical Association. He also referred to the industrial, educational and political contributions of the district of Meerut.

PRESIDENTIAL ADDRESS

Dr. Bhola Nath of Varanasi, who presided over the conference, said the following in his address :

On the occasion of the celebration of 25 years of its existence, it would not be out of place to review and take stock of things as they are today and to reiterate, once again, the aims and objects of the Association and enumerate the reasons why every eligible medical man should join the Association. Twentyfive years of life implies full maturity, but I regret to say, according to its present membership strength in relation to the total number of medical men in the country, it is still in its early childhood. Our membership strength, both in the State and in the country is roughly about 30 per cent of the total, which is deplorable. The membership of the British Association, a body exactly similar and with the same aims and objects as ours, is practically cent per cent. In the United Kingdom the first job of every gradnate, immediately after leaving college, is to get himself enrolled in the B. M. A. The reason is not far to seek. In spite of the fullest and most honest co-operation, voluntarily offered to the Government by our Association over all these many years, both at the State and the Central levels, somehow, the Governments of the States and to a good extent of the Centre, have not felt inclined to give us that total recognition which we deserve; perhaps a legacy of the British Imperialism still rampant in our Rulers. We are seeing every day that our resolutions and opinions have not carried that weight with the administration which they deserve, as is done in the United Kingdom and other progressive countries. A young graduate, fresh from college and aspiring to get into a Government job, is cognisant of it. A few years back, a certain State committed the blunder of asking its medical employees not to join our Association, but, I am glad, better sense prevailed soon after, and it corrected itself. To my knowledge, it is the service-men who form the bulk of the defaulters in joining the Association. But, I must tell our young men,

that, it is the numerical strength backed by honesty of purpose that ultimately counts, hence the imperative need, in the cause of the people and the country, is that the membership of our Association should become cent per cent. To my friends of the other specialist Associations in our country, my appeal is, that united we stand and divided, we are not listened to. We are perfectly sure that under the banner of the Indian Medical Association, each maintaining its own individual status, every such Association would have flourished much more than what it has done so far. It would have, at the same time, helped the I.M.A. to get at par with the B. M. A. and the A. M. A. in its relation with the Government.

The Journal of the I. M. A. alone is worth much more than what we pay for it, all due to the indefatigable selfless labour, just for the love of it, of Dr. P. K. Guha and his band of fellow-workers.

Positive Health

Positive health is the ultimate aim of every progressive country as ours. Let me here, for the sake of the public in general enumerate some of the standards by which positive health can be assessed. They are (*i*) decrease in the death rate of the country, (*ii*) increase in the life expectancy of the individual, (*iii*) decrease in the child and maternal mortality and (*iv*) total prevention of epidemics. Increase in the expentancy of life of an individual is possible only by providing him with adequate, wholesome food and hygienic housing conditions. We, the residents of the State, need not consult statistical data to know, how far we have progressed towards achievement of positive health in the State. If we compare the figures with only those of our neighbour a small country, Ceylon, nothing to say of other progressive countries like the U.S.A., the Netherlands, the Scandinavian countries etc., we will be surprised to note that within 10 years Ceylon has reduced its death rate by 10 per cent and increased its life expectancy by 17 years.

We thank the Government for allotting, in the Second Five Year Plan, 19 crores of Rupees for Medical Education and the Health of the State but mere allotment will not improve matters unless their implementation is worked out to the minutest details and the acid test applied by carefully observing the effects and their results.

Health Education

The one and the only recourse, for a poor country as ours, for attainment of positive health, is to lay an all-out emphasis on Health Education and Preventive medicine. The Planning Commission in the first Five Year Plan said, "Considering how much illness is the result of ignorance of simple hygienic laws or indifference to their application in practice, no single measure is productive of greater returns in proportion to outlay than Health Education." Health Education should be an integral part of Health Service—nationally, provincially and locally. The co-operation of all Health personnel, Education personnel, Social Workers, Community Development workers and Agricultural Extension workers is essential in developing country-wide education about Health and in working with the people in a community in solving the Health Problems. Health Education starts in homes, in schools and in the community. A specific budget should be ear-marked for Health Education alone to facilitate activities in training, field work, media, methods of local studies and propaganda through leaflets and journals. Health Education is now recognised as a "Medicine" in itself helping people to improve their own health and their social conditions. Health, both physical and mental, is involved in all phases of any action towards raising the standard of life. Health is related to higher productivity. Health is also instrumental in bringing about a better distribution of resources and

Dr. Bhola Nath, the President of the Conference

products. Health Education should start right from the primary and basic classes in schools and in Higher Secondary classes it should be made a compulsory subject. For the benefit of others, intensive propaganda by modern audiovisual methods must be made and a separate department should be created for propagating Health Education. On the contrary, to our great dismay, we find that the subject of Health Education is like a disowned child. To my personal knowledge I have found that neither the Health Ministry is prepared to accept its responsibility nor the Ministry of Education.

The Banaras Branch, to which I have the proud priviledge to belong, has been bringing out for the last six years an excellent monthly magazine called *Apka Swasthya* with the sole object of creating health consciousness and propagating ways and means of living a healthy life. This magazine is principally meant for the lay public. The Government has been good enough to accord recognition and give some financial help to it but, in spite of its great educative value and a very fine get-up, the Government has not yet been able to see that this magazine really reaches the masses in such numbers as to make its object effective, which can be done through Panchayat Libraries, Development Blocks, School Libraries and other similar sources. This is yet another glaring instance of failure to implement what the Government have already approved. *Your Health* is another very educative magazine that the I. M. A. Central has been bringing out in English in spite of great financial loss every year. We do very strongly recommend these magazines to the public in general and for placing on the waiting room tables of the medical men.

It is high time that the Government fully realised the importance of Health Education, the failure of State Health Insurance Scheme in Lucknow in 1956 should be an eye-opener. No health programme, can ever succeed unless there is co-operation from the masses and co-operation cannot be expected from them unless they are educated and made health conscious. In democracy, the masses must be told beforehand and educated about that particular scheme which is going to be launched at the time. To do this, is entirely the responsibility of the Government. Medical men do also play a great part in educating their patients both on individual and family basis, each one does it on a small scale and in his own small sphere, but my appeal to my colleagues also is, that instead of shifting the entire responsibility

on the Government we must intensify our efforts as well by devoting some more minutes of our time, both in the clinics and at the patients' residence towards preventive medicine and health education. A few words from us carry much greater weight. I assure the Government the fullest co-operation from the Association and its individual members towards the attainment of our common object.

The greatest emphasis in this connection should be laid on the school, our future hopes. A healthy body carries a healthy mind. Schools are the backbone of every nation and if we succeed in producing from our schools, boys and girls fit both mentally and physically, we can be assured of the future of our Nation; all the ills and the perversities of the present day social order will vanish resulting in the uplift of the nation in all spheres of National life. While discussing health education in schools, we cannot ignore the subject of health inspection of school children. Our Central Council for Health, in one of its deliberations, has regretted the lack of provision for School Health Service Programme and hoped that top priority will be given to the subject in the Third Plan. We are sorry, the conditions as existent today, are far from satisfactory. Keeping in view the shortage of necessary medical personnel we have to suggest to the Government that in order to make their scheme of health inspection of school children more effective and successful, let it come forward and take the help of our Association and we can assure the Government of the services of the necessary enthusiastic personnel. About five years back the Banaras Branch drew a scheme of Health Inspection of School Children involving a very nominal strain on the State exchequer. That scheme was submitted to the Government, but unfortunately it has not yet seen the light of day. Another very comprehensive and detailed scheme on this subject has been presented to the West Bengal Government by the I. M. A. Calcutta Branch. Our State Government will do well to appropriate the same and benefit by that Scheme.

Medical Education

Medical education means, the basic education as imparted in the M.B., B.S. standard and nothing short of it. Certain modifications in the curriculum are necessary as a guide to the teachers to confine themselves to the basic requirements of their subject and not to get into details. A revision of the curriculum from this aspect can reduce the length of the course by about six months. The recent graduates have certainly more theoretical knowledge but what is significantly lacking in them is the faculty of "a well developed clinical sense." The students should be taught in a way as to be capable of trusting their clinical findings no less than the laboratory reports. A graduate with a sound knowledge of anatomy, physiology and pathology and backed by a well developed clinical sense is good enough to make his mark in subsequent life. Three months' compulsory internship, financed by Government, in rural (Tehsil) hospitals in small batches under a clinical teacher is the only solution of the present impasse. I repeat, that it is imperative that a clinical teacher must accompany every batch of students. Attempt should be made in due course to adopt the mother tongue as the medium of education for the under-graduates.

The cause of the deficiency in medical education in the under-graduate stage is the lately crept-in remoteness between the teacher and the taught, except in few cases, which did not exist in olden days. The student, very silently and unconsciously, learns more from his teacher during his clinical rounds than what he does in the lecture theatre. The teachers are not to be blamed altogether, because, due to the large number of students, it needs great personal effort and sincerity of purpose to be able to maintain individual contacts. All the same, let me remind the professors of today, to do what had been done for them; let them banish completely from their minds the idea that a professor is far too busy to devote any time for personal contact with under-graduates—this is to put things mildly. Some remedy has to be and must be found. Even at the post-graduate level, the students have to confine themselves to the theoretical knowledge because they do not get ample opportunity for practical training.

Specialisation and research at the post-graduate level should be encouraged and it should be the duty of the teacher to pick out the boys, in the under-graduate stage, for subsequent research work. Every research worker must be paid a handsome scholarship. Along with research, post-graduate studies in various specialities should be openly encouraged. I would like to make a passing reference here that the Ayurved, its basic principles and therapeutics should be made a compulsory subject in the curriculum of under-graduate studies. This will facilitate research in Ayurved at the post-graduate level. Practical difficulties in the introduction of a new subject can be combated with definite will and effort. The history of ancient medicine and surgery of our country beginning from the days of Charaka and Sushruta up to the Moghul period should be revised and rewritten.

Medical Relief in the Second Five Year Plan

No amount of effort on the part of the Government alone can bring about the desired result in the National Development Programme unless each individual in the country, medical or otherwise puts his shoulder wholeheartedly to the wheel. As already mentioned above, each one of us is doing our bit in the sphere of Health Education and voluntary service as and when needed. Still, my appeal to my colleagues is to intensify our efforts in that direction and, in ur every-day life, we should always bear in mind "what my duty to the country is and what more can I do towards the national development." There is no limit to the good that a person can do to others and, please believe it like an axiomatic truth, that for every good act done, he is rewarded sooner or later. On a collective basis we should further intensify our efforts and explore ways and means to do greater good to the public without looking to the Government for any initial financial assistance. Let us cease thinking in terms of individual existence. If each one of us makes the determination to devote one hour every day for national development it will mean 75 man-power years per year for the State.

Year after year we had been trying to impress upon the Government the extent of the medical relief needed for the State, at the same time we are however, cognisant of its financial limitations. Establishment of Primary Health Centres, up-grading of some of the hospitals, increasing hospital accommodation etc., as envisaged in the Second Five Year Plan, all deserve our commendation. But we have to point out that mere allotment of money and making of schemes on paper will not bring relief to the masses. It is the correct and thorough implementation of the scheme that matters and the success judged by the results. We are already more than half way through the Second Five Year Plan. I beg to ask you whether the conditions have improved satisfactorily and are commensurate with the expenses incurred. Most of the Primary Health Centres have not been functioning satisfactorily. For efficient implementation of the Primary Health Unit schemes we have to suggest (1) Give the doctors better remuneration (2) better housing accommodation (3) facilities for fast moving transport so that all deserving cases could be quickly transported to hospitals, Tehsil or the District as need be (4) as far as possible laying down specifically the nature and extent of their duties and responsibilities, preventive, curative and educative (5) appointment of a supervisory staff to go round at least once if not twice a month to inspect the work done and assess for himself, with

the help of the local population, the efficiency of the service rendered. In this connection we also like to point out that the economic assistance for the upgrading of these Primary Health Centres can be made available from the local population on co-operative basis. This is the age of the co-operative movement. I have discussed this aspect with a number of rural brethren and they have welcomed it. Transport arrangement is very necessary because, after all, the scope of work expected from these Primary Health Centres is limited and all cases going beyond their limits should be immediately transported to larger hospitals. I must here also emphasise that there should be a 50-bedded hospital in every Tehsil Headquarter and manned by at least one P. M. S. (I) Officer and other hands. Mobile units are very useful and their numbers must be increased. The same defect of implementation applies to the schemes in urban areas also. Hospital buildings worth several lacs of rupees are lying empty, unequipped and unusable for over two years. What it means in terms of money and psychological impact on the public mind, I leave it to you to judge. On the other hand there are institutions doing yeoman service and have to remain over-crowded far beyond their normal capacity and have to function with the same skeletal staff which they had five or more years ago and yet no assistance is coming forward. This is wrong planning. This is wrong implementation. We would suggest to the Government that before launching any health scheme it would do well to consult the local Medical Association for the needs of that particular area and should also co-opt members of the Association in the committee which would be supervising the implementation of that scheme. Please take the public and the medical men in confidence and then see whether the results improve or not. The Hospital Advisory Committee, the need for which is accepted all round, should be revived and revitalised to function effectively.

We do not want to embarrass the Government with our demands which would put it in economic distress. We know that our able Chief Minister and Health Minister are aware of the relative quantum of the various needs of the State. What we like to emphasise is, that in the selection and implementation, the Government should actively accept and utilise the co-operation offered by the Indian Medical Association and its local branches. We wonder why there is not that co-operation between the Government and the Association which is so desirable A healthy co-ordination between the two is essential in the need of the State. Why not sit together? After all, both are working for the common object—the good of the country.

The Red Cross and similar organisations as a corollary to medical relief even in times of peace should be revitalised at all levels, local, provincial and central and it should create adequate funds and man-power to be able to combat the yearly menace of floods and other calamities in the State.

Hospitals and Doctors

On the one hand the Governments is not finding enough doctors to man dispensaries and Primary Health Centres of the rural areas and on the other it has failed to utilise the services of those specialists and experienced men who are willing to serve the public and the hospital on a part-time basis. The permanent personnel can thus be released for those areas where there is a dearth, and gainfully employed there by giving them adequate "Rural Allowance" as has been done by the West Bengal Government. Not only here in our country but also in the West, all those who have had occasion to visit those countries must have noticed big hospitals, manned and run very efficiently by part-time staff. We would suggest that at least until such time that our medical colleges are able to produce graduates sufficient for the need of the State, the system of part-time appointments in hospitals should be revived but at the same time the duties and scope of work of each should be reorganised. Revival of this system will mean a great economic saving and availability of manpower. We would also like to suggest that a genuinely sympathetic but at the same time a firm and selfless supervision, unaffected by all extraneous influences, of the merit and work of every indivinal doctor will greatly improve the efficiency and the output. The medical personnel in the semi-Government institutions like the Municipal and District Boards should be placed at par with Government employees in all matters of work, remuneration, transfer etc.

The Mentally Sick

Care of the mentally ill has been the theme of W.H.O. this year; we would also like to draw the attention of the Government towards the existing Mental Hospitals of the State. It is high time that we change our angle of vision. Instead of maintaing them as asylums for the lunatics, we should convert them into real psychiatric clinics so well fitted and equipped as not to give the least impression to the patient that he has been declared insane and is being shifted into a mental hospital. We have seen schisophrenia cases getting much worse when admitted in the mental hospital and improving remarkably, soon after their transfer to more congenial atmosphere. I hope the Government in consultation with the experts on the subject will think of reorganising the medical relief to the mental cases—whose number is fast increasing within the last decade due, probably, to the increased stress of life.

Private Practice

It would not be out of place to put before you my views on another important topic affecting the service men viz., the stoppage of their private practice. Thinking dispassionately and considering all the pros and cons both from the point of view of public good and improvement in medical research, I think, increase in their hours of work in the hospitals and strict enforcement of that rule will bring about the desired efficiency and increased output. Complete ban on private practice will deprive the public particularly of those areas where there is a dearth of medical men, from availing in times of need of the services of qualified men. Until the Government is able to provide enough hospital accommodation commensurate with the needs of the State complete ban on private practice is not desirable.

Nursing and other ancillary services too need greater attention not only in imparting to them the knowledge of their work, but greater emphasis during their training period and subsequent years, be laid in infusing into them the real spirit of service—a humanitarian approach to their duties. It is not at all difficult only if their teachers and superiors observe the same attitude at all times in their daily life and infuse that into their pupils both in practice and in precept. To be able to attract better quality of candidates into this profession, we would strongly recommend to the Government to introduce 'Nursing' as an optional subject in the High School and Intermediate courses.

Separate wings devoted exclusively to research work should be established in each provincial hospital and ample funds should always be made available to it. This research wing should have a separate existence but it will work in co-ordination with the research work that may be done in other specialities.

General Practitioners in Urban and Rural Areas

It is already an accepted fact that the general practitioner has a definite and important place in the medical relief of the country, but unfortunately, in our country they are the most neglected. Independent medical practitioners form the great bulk of the medical profession. As things are at present their future is not very promising. A young independent medical

practitioner is barely able to earn a subsistence for himself because he cannot digress from the principles of medical ethics infused into him in college which is regrettably lacking in his contemporaries of other systems. The Government should either socialise the entire medical relief of the country or give these new doctors necessary protection and encouragement. Independent medical practitioners should be exempted from the application of the Drugs and Excise Rules, which should be so suitably amendded as to give them relief from maintaining mounting cumbersome account registers. The Government does not seem inclined to recognise any difference between the general chemist and an individual practitioner maintaining his own dispensary exclusively for his own patients. This is unfair, and it should be rectified. This mars their efficiency because, we are convinced, that a sincere medical man can neither be a businessman nor a chemist.

I would like to point out my reasons why a young practitioner fresh from college is disinclined to settle independently in the rural area. They are (1) the higher standard of living to which he is accustomed to during his college career—this applies even to those who hail from rural areas, (2) unhealthy housing condition, (3) lack of transport, (4) above all, the most important is the lack of self-confidence in himself due to inefficient laboratory facilities for diagnosis and treatment, which he is used to, coupled with nonavailability of the required drugs. It is not entirely an economic problem alone because most of us know by now that people settled in rural areas are much better off economically than most of their colleagues of the urban areas. Lack of self-confidence is due to the defective teaching. Make them conversant with the rural conditions during their compulsory internship period and provide them the barest but necessary facilities and then you will have the problem solved.

Pharmaceutical Industry

It is certainly very gratifying to note that this industry is fast increasing in our country and we have high hopes that in the near future it will make us self-sufficient. But our appeal to the Government is to properly organise and channelise this promising industry. The Central Government should allot particular items and particular lines to individual concerns and not allow a haphazard production resulting in unhealthy competition and consequent inevitable deterioration of the quality. Several times the I.M.A. has requested the Government to increase the resources for testing the quality and components of each batch of the product before marketing it. A seal of quality on each batch will inspire greater confidence in the purchasing public and will not allow the standard to deteriorate.

Family Planning

Family Planning Programme is an integral part of the overall health programme of the Centre but I am afraid, according to my views, it is not being correctly implemented. No amount of propaganda and distribution of tons of leaflets will ever succeed unless we produce workers, really intelligent and fairly well-educated social workers, who should be able to tackle the problem psychologically on individual basis and socially on family basis. In the latter case a social worker should first befriend himself or herself to the family in such a way that his or her words of advice carry weight with the family and then open the subject at a particular psychological moment and convince the people concerned that it is primarily in the interest of the health of the individual and the family that his advice is being given. Appropriate time and opportunity is to be seized by Primary Health Centre doctors and other medical men to impress upon the mind of the husband or the wife or both the utility of family planning. The Family Planning Programme has better chances of success if all personnel of the health centre realise that it forms an integral part of their overall health programme and remain vigilant to seize and utilise these teaching-learning moments. Mere opening of clinics and propaganda will not bring the desired result. It is the psychological approach that is needed. The personnel should be specially trained from that point of view.

E. S. I. Scheme

This scheme should be extended as rapidly as possible and should also include the members of the family of the insured. In spite of divergence of views I am of the opinion that the panel system is the better of the two because it provides satisfaction to the insured and necessary incentive to the doctor. Independent medical practitioners every day come across instances of the inefficiency of the service system.

Availability of Drugs and Other Necessary Supplies

These are not luxury goods, hence they should be treated with more liberal consideration in spite of exchange difficulties. It is the duty of the State Government to see that the necessary items become available, hence they should draw out a list in collaboration with the State branch of the Association and forward it to the Central Government for due consideration.

Military Training

Having been a member of the U.T.C. and having derived considerable advantage from it I feel tht the State Government should recommend to the Centre enforcement of compulsory military training in all medical colleges for proper training of the mind and the body and create a reserve for times of emergencies.

Central Building Fund

When an individual or institution grows into maturity it becomes an imperative need to have a building of its own adequate to its requirements. On a national basis it is derogatory for the I.M.A. not to have a building of its own so far. I am sure every one of my colleagues feels convinced about it. Then why not please come out with your share of contribution piece-meal or lump sum whichever suits your economy. The Central Government has very kindly given us a good plot of land at a very nominal rent. With our present membership strength, if each of us contribute Rs. 50/-, the building will be completed in no time. Every one of us has to intensify our individual efforts to see that the building is completed within the scheduled time.

To the Young Colleagues Fresh from College

Before I close, I should like to make some candid remarks to my colleagues fresh from college and just entering the threshold of profesional life. They relate to (i) how to do and (ii) what to do. The first and the most important thing is that labour with sincerity of purpose always pays. It means that even if one loses the patient he never loses the family. Please try to put in your best in each and every work that comes before you. In every case, in the beginning, be doubly sure of your stand by consulting literature on the subject and in case of doubt never hesitate to consult, even on your own, any of your seniors. One has to cling to the case, as it were, and before the day ends, think in retrospect over each and every happening of the day. This habit will, I assure you, prove a sure key to success.

The present needs of the country demand that unless you are qualified to practise a speciality, you should think of settling down for independent practice in rural areas. It will necessarily need a reduction in your

standard of living—in the glamorous part of it. If you have done that, in about five years or so, you will never repent your decision, instead, you will feel satisfied that you have played your part in the National Health Development.

Resolutions

The following resolutions were passed at the conference :

1. *Condolence* : This Conference places on record its deep sense of sorrow at the sad deaths of the following members of the Association and conveys its heartfelt sympathy to the members of the bereaved families : 1. Dr. Babu Ram Garg, Muzaffarnagar, 2. Dr. H. R. Sabarwal, Meerut, 3. Dr. Subhan Ali, Deoband, 4. Dr. K. C. Mittra, Allahabad, 5. Dr. M. L. Sharma, Aligarh, 6. Dr. N. N. Dutta, Allahabad, 7. Dr. S. D. Vania, Lucknow, 8. Dr. S. K. Some, Dehra Dun, 9. Dr. C. I. L. Dina, Varanasi, 10, Dr. Khushi Ram, Farrukhabad.

Copies to be sent to the Branches concerned for conveying them to the families of the bereaved members.

2. *Enforcement of Shop & Commercial Establishments Act upon Doctors* : This Conference views with grave concern the move by certain State Governments of enforcing the Shop & Commercial Establishments Act upon Doctors' Clinics.

Doctors' Clinics are not like shops, trade and commerce. In reality, they are small outdoor hospitals run by qualified medical men for the exclusive purpose of serving the suffering humanity. Bringing such benevolent organisations within the category of shops will severely injure the interest of the profession and the public alike.

Forcing the doctors to keep and maintain books of attendance, esablishment and loss and profit accounts and to restrict their activities within scheduled times will seriously affect professional duties particularly in cases of emergency.

Under the circumstances the I.M.A., Central Office is urged to launch an India-wise protest through press and platform against the enforcement of the Act.

3. *Sales Tax* : Whereas the Medical Profession has been protesting for the last 3 years against the interpretation of the word 'dispensing of prescriptions by the registered medical practitioners' to their patients in their clinics, being interpreted by the Government as 'manufacture of drugs',

and whereas the Drug Act 1940 has definitely laid down that 'Dispensing' is not 'Manufacture'.

Be it resolved that this Conference strongly protests against the Sales Tax being levied on registered medical practitioners dispensing medicines to their patients only, by interpreting dispensing as "manufacture".

4. *Medical Ethics* : Since the Practitioners of other medical sciences have also been registered by the Government in their respective registers, this Conference recommends to the Government that it should also draw out a code of medical ethics for them and should see that it is observed by them.

5. *III Five Year Plan* : This Conference draws the attention of the U. P. Government towards the percentage of the total revenue that the West Bengal Government spends over the health of the State, and requests that the Government should appropriate about the same percentage in our State also.

Further resolved that the Government be requested to consult the Indian Medical Association, U.P. State Branch in all matters relating to selection and implementation of the schemes affecting the health of the State in the Third Five Year Plan.

6. *State Medical Services* : Since there is only one basic standard of medical education in modern medicine (M.B.B.S.) be it resolved that the Government be requested not to create compartmentalism in the medical and health services, and to maintain one cadre of service, their emoluments being on the scale recommended by the I.M.A.

7. *History of Medicine* : This Conference feels that it is desirable that a correct history of Medicine in India since ancient times and its contributions to the development of World Medicine be written and it is requested that the Central Organisation of the Indian Medical Association may take an initiative in this matter.

8. *Health Education* : This Conference requests the Ministers of Health and Education to take immediate and concerted steps for the propagation of Health Education among the masses particularly amongst school children.

A full developed scheme should be prepared by the departments concerned and included in the current and III Five Year Plans.

The Indian Medical Association offers its unstinted co-operation in the preparation and implementation of the scheme.

9. *Dangerous Drugs Act* : This Conference expresses its grave concern over the proposed application of Dangerous Drugs Act, on the members of the medical profession calling upon all medical practitioners to register themselves with the Government of U.P. which is uncalled for, unnecessary and vexatious, besides being against the rules of the Excise Manual, Volume III.

This Conference unanimously resolves to request the State Government to drop the extension of this Act to the qualified medical practitioners registered under the Indian Medical Degrees Act of 1916.

10. *Control on Prescriptions* : Whereas prescribing or dispensing of Indian, British, American or Russian pharmacopoeial drugs by untrained or undertrained medical practitioners is highly dangerous for the patients and the public,

Be it resolved that the State Government be requested to ban the prescribing and dispensing of pharmacopoeial drugs by practitioners who are not registered under the Indian Medical Degrees Act (Act VII) of 1916.

11. *E.S.I. Scheme* : Resolved that this Conference once again requests the State Government to introduce Panel System of medical aid in the E.S.I. Scheme specially when the scheme is being extended to the families of the insured.

12. *Domiciliary Treatment of Tuberculosis* : Resolved that the Government be requested to start domiciliary treatment of Tuberculosis in such towns where survey reveals a high incidence of the disease.

13. *Ambulances* : It is highly regretted that the ambulance cars which are usually kept with the hospitals and Municipal authorities are not promptly available in cases of emergency for which they are really ment. This Conference suggests that these ambulance cars should be made available to the patients at short notice and low rates.

BRANCH NOTES

CACHAR BRANCH—A meeting was held on 28-6-60 at Silchar. A resolution was adopted on the sad death of Dr. L. K. Baroouh of Nowgong.

Mr. M. N. Das presented a case on which a lively discussion ensued.

Other resolutions were passed suggesting the introduction of direct telephonic connection between Lahac Central Hospital and Silchar and to move appropriate authority for the medical check-up of students.

At an emergent meeting under the presidency of Dr. B. Bhattacharjee held on 11-7-60, resolutions were passed condemning the atrocities committed in the Assam Valley and appealing to all concerned for the restoration of peace and order ; requesting the arrangement for adequate compensation to medical practitioners affected and to the families of doctors killed and protection to those living in these areas ; recording apprecia-

tion of the activities of the Cachar Branch of the Indian Red Cross for helping the refugees.

At an emergent meeting held on 6-8-60 under the Chairmanship of Dr. B. Bhattacharjee, the following resolution was carried: "In the perspective of the recent barbarous atrocities and hooliganism and consequent tension prevailing in Assam Valley this branch resolves that the next session of the All-India Medical Conference scheduled to be held at Gauhati be postponed for the current year." Another resolution requested the Assam State Branch to constitute an Enquiry Committee to assess the loss sustained by individual members of the medical profession in different districts of the State during the recent disturbances and to demand and exert its influence on the Government for the payment of full compensation for the loss and early rehabilitation of the victims with guarantee of security and safety."

CALCUTTA BRANCH—A meeting on 12-8-60 noted "with great concern the deaths of multitudes of persons of Bengali origin domiciled in the State of Assam, including medical practitioners", expressed sympathy to the bereaved families and observed two minutes' silence in memory of the deceased doctors and other persons. The acts in Assam were condemned and the meeting called on the Governments of India, West Bengal and Assam to adopt measures for the cessation of atrocities, trial of persons responsible for them, rehabilitation of the affected and interim relief. It was further resolved that in view of the atrocities on medical personnel and others the President and Working Committee of the I.M.A. be requested to make a suitable change of the venue of the All-India Medical Conference from Gauhati and that members of the branch would cease to participate if the conference were held at Gauhati. The Bengal State Branch was requested to ask all its members to dissociate themselves from the conference if it were held at Gauhati.

DEORIA BRANCH—A meeting of the Working Committee was held on 7-8-60 under the Chairmanship of Dr. N. C. Jain. The meeting recorded "its strong recentment and a feeling of condemnation at the brutal and murderous assaults on the lives of non-Assamese, especially Bengali-speaking population of Assam in general and Dr. A. C. Dutta of Gauhati and Dr. S. C. Guha of Panda Railway Colony and many other members of the medical profession". It viewed with "great concern" the Assam Government's failure "to render adequate and timely protection to the innocent and peaceful citizens", which has "given a chance of creating a strong suspicion, right or wrong, against the Government of having had a hidden hand in the affair." In view of the absence of guarantee of safety, the Committee appealed to the Central Council of the I.M.A. "to arrange cancellation of the impending All-India Medical Conference at Gauhati. The Central Council should also take initiative to condemn provincialism, condole the tragic death of innocent persons and to extend its sympathy to the sufferers' family". The Committee further said that if its appeal failed the Deoria Branch "will duly broadcast its decision through press and platform and request every member of the Indian Medical Association to boycott Gauhati session of the conference completely and perfectly".

SURI BRANCH—Under the auspices of the Suri branch, I.M.A., members of the medical profession of Suri met on 6-3-60 to condole and record their deep sense of sorrow at the sad demise of Late Dr. Sabita Ranjan Mukherjee, the seniormost practitioner of the town, whose death took place on 29-2-60. Dr. B. C. Mitra president of the branch was in the chair.

TIRUCHY BRANCH—A meeting was held on 14-5-60, Dr. G. Viswanathan presiding. Some 40 members were present. The names of the president and three vice-presidents for the Centre were nominated.

Dr. S. Sundararaman gave a lecture on Renal Failure, followed by the usual discussion.

TITAGARH BRANCH—An inauguration ceremony of the office room of the branch was held on 3-3-60. Dr. H. K. Roy, the president of the Bengal Provincial Branch inaugurated the office and Dr. Salil Dutt was the chief guest. The secretary of the branch gave an account of the activities of the branch. The membership strength has risen from 7 to 32. The branch intends to open a library shortly. Many prominent members of the Bengal Provincial Office were present. Attendance was about 40.

ULUBERIA BRANCH—A meeting of the branch was held on 7-4-60 to observe the World Health Day. Nine members were present.

Dr. B. C. Basak, (Asstt. Director of Health Services, Planning and Administration), Dr. D. P. Ghosh and Dr. R. C. Ghosh were present on invitation.

Dr. J. N. Podder, S.D.H.O., Uluberia spoke about Malaria Eradication programme—the theme of the World Health Day this year.

UTTAR PRADESH STATE BRANCH—The 3rd meeting of the working committee of the U.P. State branch for the year 1959-60 was held on 3-4-60. Thirteen members were present. The meeting condoled the death of Dr. M. P. Verma, Dr. (Capt.) Shyam Lal, Dr. B. N. Mahey, (4) Dr. (Mrs.) G. N. Tiwari and Dr. G. N. Vyas. The proceedings of the last meeting held on 10-1-60 were adopted. The dates for the U.P. State Medical Conference (Silver Jubilee Session) were confirmed. The quarterly accounts of the State Branch from October-December, 1959 were adopted after some amendments. Regarding Kanpur Scheme of Health Insurance, certain information was asked for. A sub-committee was formed consisting of Dr. Bhola Nath, Dr. H. N. Shivapuri and Dr. R. N. Gupta to consider the resolution of the Sultanpur branch regarding the position of doctors in Development Blocks. Central office circulars were gone into and discussed. Regarding the increase in Telephone charges and the method of collecting rental etc. it was decided to approach the Prime Minister and some other ministers of the Cabinet.

VIJAYAWADA BRANCH—The monthly general body meeting of the branch was held on 24-4-60. Dr. K. Atchamamba presided. Nominations were made of one president and three vice-presidents of the Central I.M.A.

WARANGAL DISTRICT BRANCH—A meeting under the presidentship of Dr. T. S. Murthy was held on 30-5-60 to condole the death of Dr. B. Venkat Rao, founder-member and ex-secretary of the branch. A resolution expressing the members' deep sense of sorrow was adopted.

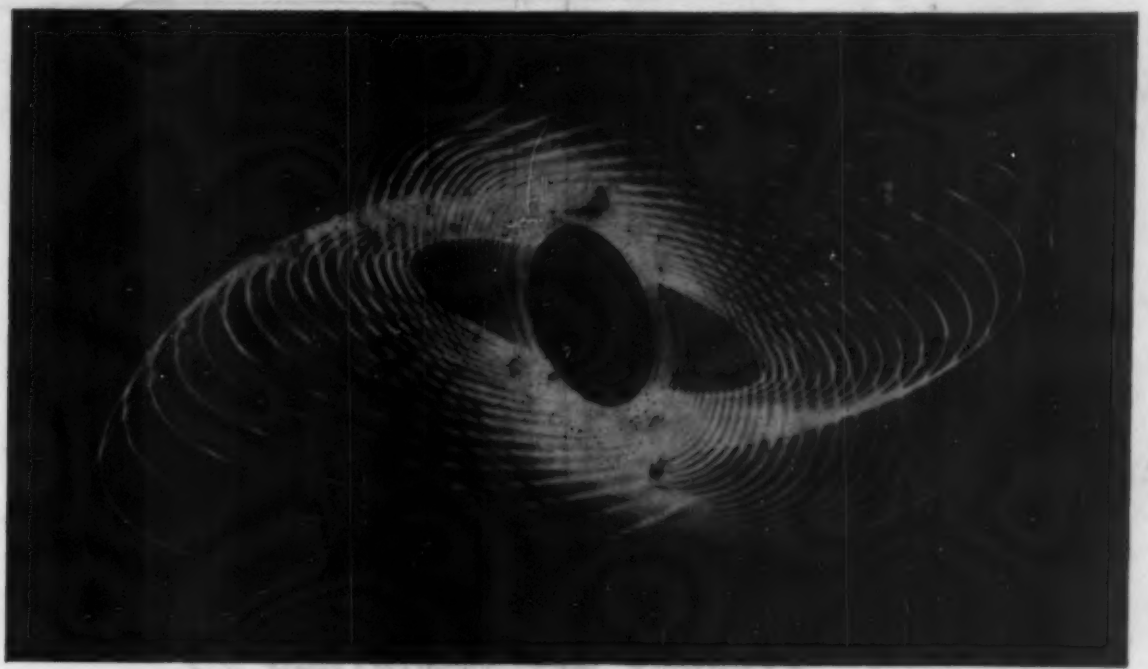
A meeting was held on 12-6-60. Dr. T. S. Murthy presided. Dr. T. Laxminarayana, Principal, Regional Medical College, Warangal, spoke on Medical Education in India.

WEST GODAVARI BRANCH—The 16th annual meeting was held on 19-6-60. Dr. D. Rajasekhara Rao presided. Dr. P. S. Giri, president of the Andhra Pradesh State Branch inaugurated the meeting. He spoke on the need to increase membership and suggested various new activities.

The annual report and accounts were presented and adopted.

The scientific session was presided over by Dr. H. B. Rao. Dr. K. Suryanarayana spoke on Hepatic emergencies and Dr. M. Sitaramaswamy on Emergencies in Surgical Practice.

The following office-bearers for 1960-61 were elected: Dr. D. Rajasekhara Rao—president; Dr. P. Rama Rao—vice-president; Dr. V. Venkata Rao—hony. general secretary; Dr. R. N. Raju, Dr. P. Kameshararao and Dr. D. Subramanyam—jt. secretaries; Dr. V. Narasimha Rao and Dr. V. Venkataraman—representatives to Central Council.



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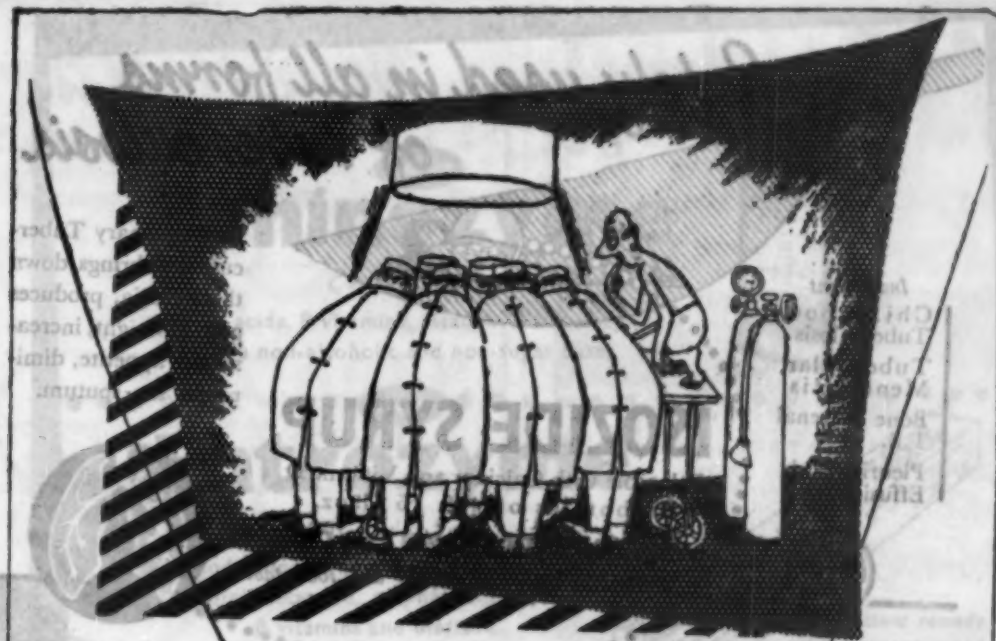

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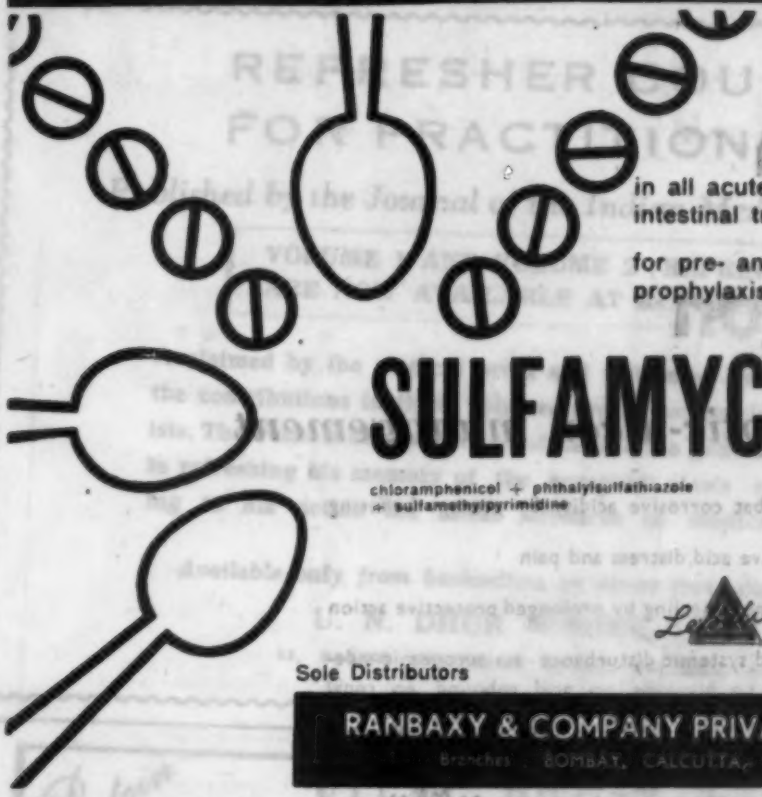

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